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Montana

DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

Oil and Gas Conservation Division

Thomas L. Judge, Governor

ANNUAL REVIEW FOR THE YEAR 1975

Relating to

OIL AND GAS

Volume 19

BOARD OF OIL AND GAS CONSERVATION

R. A. CAMPBELL, Chairman
122 North 27th Street
Billings, Montana 59101

C. J. IVERSON, Vice-Chairman
Whitlash, Montana 59544

MILTON G. ANDERSON
P. O. Box 73
Sidney, Montana 59270

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Chester, Montana 59522

JOHN P. MOORE
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Cut Bank, Montana 59427

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OF THE STATE OF MONTANA

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1975
SUMMARY OF YEAR ACTIVITIES

Oil Produced..... 32,843,674 Bbls.

Oil Imported (Refined)

Canadian - 19,373,228

Wyoming - 19,796,361

39,169,589 Bbls.

Oil Exported (Transporters)..... 30,947,338 Bbls.

Gas Withdrawals

Natural 40,659,602

Associated 3,013,108

43,672,602 Mcf.

Averages: (365 days)

Oil Produced 89,983 Bbls.

Oil Imported 107,314 Bbls.

Oil Exported 84,787 Bbls.

Natural Gas 119,651 Mcf.

Board of Oil and Gas Conservation of the State of Montana

Thomas L. Judge, Governor

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HELENA, MONTANA 59601

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15 POLY DRIVE
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Technical Office and

Southern District Field Office 15 Poly Drive, Billings, Montana 59101

Northern District Field Office218 Main Street, Shelby, Montana 59474

Annual Review for the Year 1975 Volume 19

ANNUAL REVIEW — MONTANA 1975

More wells drilled for oil and gas were completed in Montana during 1975 than any of the previous five years. A total of 387 wells were completed as oil or gas producers, 122 more than in 1974.

The Montana Board of Oil and Gas Conservation recorded a total of 845 wells drilled, including 15 new gas field discoveries and six oil field discoveries. A total of 257 wildcats resulted in 21 discoveries for a success ratio of 8.2%; near the 9% success ratio of 1974. Infield programs featured the 1975 overall drilling. Of the 588 development wells drilled, 105 were completed as oil wells and 261 produced gas for a success ratio of 62%. This compares to a 52% success ratio for 1974. Development well completions also include four significant extensions to established fields and two field wells that encountered new pay zones.

Oil production for 1975 was down from the previous year's production. The production of oil decreased from 34,553,962 barrels in 1974 to 32,843,674 barrels. This decrease was mainly due to a normal production decline at Bell Creek Field in the Powder River Basin and Cut Bank Field in northern Montana. The Tyler sands of Central Montana, however, continue to show a substantial increase in oil production, where 303 producing wells had a total output of 3,954,024 barrels for 1975, up 619,265 barrels from 1974.

Natural gas production of 43,622,602 MCF for 1975 presents a 6,769,065 MCF decrease from 50,391,667 MCF shown for 1974. This is largely due to the duplicate inclusion of storage gas at Cedar Creek Field into the reported produced gas total for 1974. Tiger Ridge also had a decline of production, down 3,732,709 MCF from 1974.

Gas was produced from seven additional areas in 1975 that were not on stream in 1974; including Bears Den Field in Liberty County, Brown's Coulee and Coal Coulee in Hill County, North Clark's Fork and South Clark's Fork in Carbon County, Pumpkin Creek in Custer County, and Strawberry Creek in Toole County.

Most of the drilling during 1975 was again directed at shallow upper Cretaceous gas sands in north-central Montana predominantly in the Bowdoin Dome area of Phillips County and the Bearpaw Arch area of Blaine and Hill counties. Considerable interest was also demonstrated in the Kevin Sunburst Dome area in the northwestern part of the State. A total of 136 wells were drilled in the Bowdoin Dome area with one of the eleven wildcats drilled and 119 of the 125 development wells being completed as successful gas producers. A major program of 50 exploratory wells and 159 development wells in the Bearpaw Arch area resulted in four gas discoveries, one development oil well and 60 infield gas completions. The Kevin Sunburst Dome area drilling activity consisted of 20 wildcats and 46 development wells for a total of 66 wells drilled, including 4 gas discoveries, 12 oil and 19 gas development completions.

Drilling for added oil production from the Tyler sands along the Central Montana uplift continues to accelerate. A total of 78 wells were drilled, 23 exploratory and 45 development, resulting in three discoveries and twenty development producers.

The dominant interest in the shallow gas producing sands of northern Montana and oil bearing Tyler sands of Central Montana is expected to continue in 1976, with the possible increase in exploratory drilling for deeper reservoirs (Madison, Devonian, Silurian and Red River formations) in the Williston Basin area of northeastern Montana.

A renewed interest is being shown in the overthrust area along the western portion of Montana due to recent major discoveries on the structure south of the State boundary. Exploratory research is underway to delineate drillable prospects. The trend, which is sparsely drilled, is known to contain the reservoir rock and entrapment for potential hydrocarbon accumulations of major proportions.



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FIVE YEAR SUMMARY

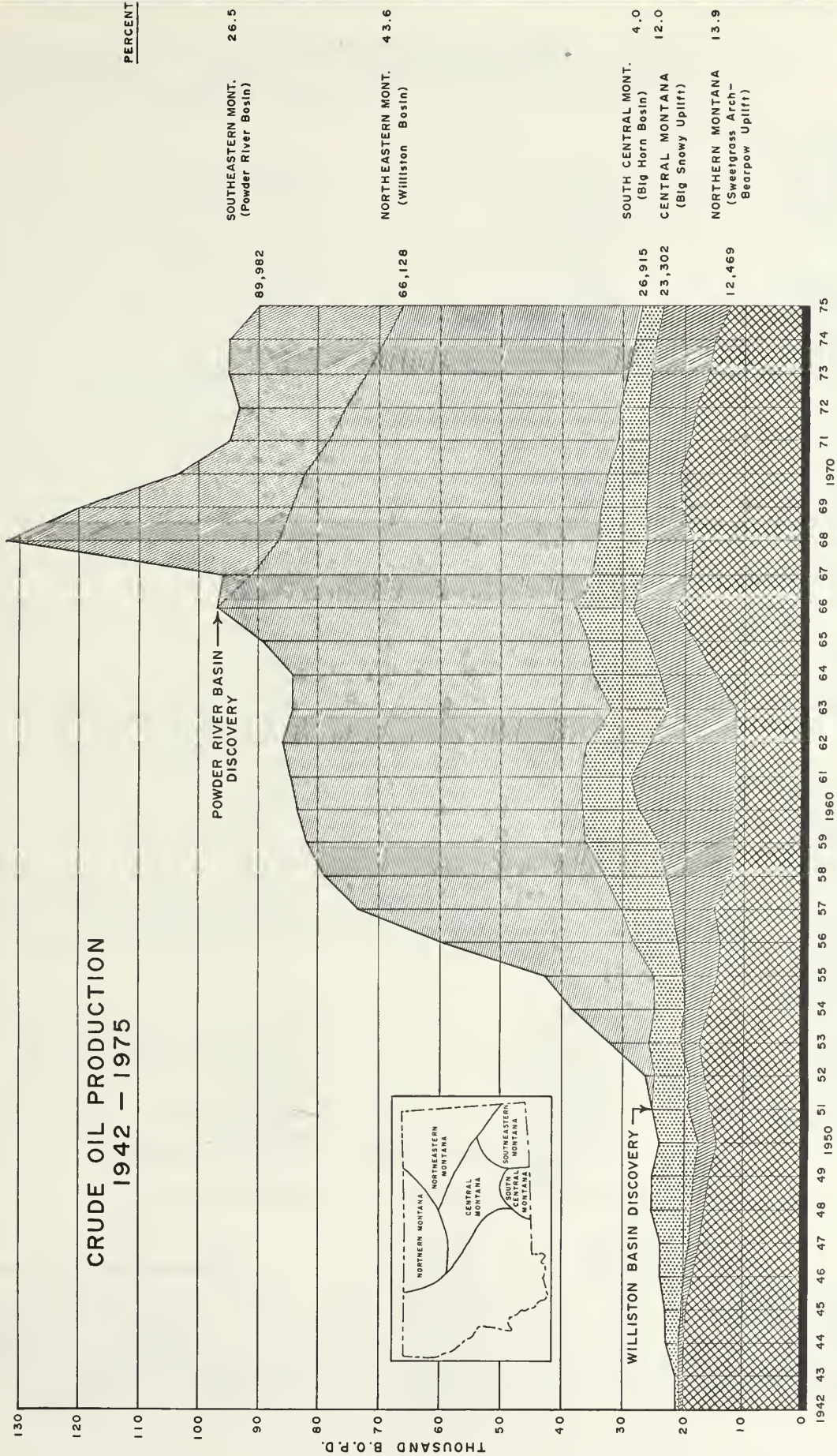
	1970	1971	1972	1973	1974	1975
Production, Northern Montana—Bbls.	7,680,831	7,292,476	6,646,908	5,948,826	5,464,319	4,551,324
South Central—Bbls.	2,329,187	2,028,304	1,742,749	1,515,088	1,432,528	1,318,779
Central—Bbls.	1,915,273	2,274,124	2,817,045	3,238,967	3,334,759	3,954,024
Williston Basin—Bbls.	18,110,147	17,042,703	16,361,771	15,735,703	14,939,292	14,312,685
Powder River Basin—Bbls.	7,843,259	5,961,116	6,335,666	8,181,598	9,383,064	8,706,862
TOTAL	37,878,697	34,598,723	33,904,139	34,620,182	34,553,962	32,843,674
No. of Producing Wells, Northern Montana	1,806	1,768	1,856	1,708	1,802	2,067
South Central.....	92	96	83	83	86	100
Central.....	200	212	224	245	267	303
Williston Basin.....	743	748	706	709	712	734
Powder River Basin.....	371	321	265	248	233	231
TOTAL.....	3,212	3,145	3,134	2,993	3,100	3,435
Average Daily Production/Well—BOPD,						
Northern Montana..	11.6	11.3	9.8	9.5	8.3	6.0
South Central.....	69.3	57.9	57.4	50.0	45.6	36.1
Central	26.2	29.4	34.4	36.2	34.2	35.8
Williston Basin.....	66.8	62.4	63.3	60.8	57.4	53.4
Powder River Basin	57.9	50.9	65.3	90.4	110.3	103.2
STATE AVG.	32.3	30.1	29.6	31.7	30.5	26.2
Development Wells Drilled, Oil Wells.....	60	49	79	46	58	105
Gas Wells	30	36	97	165	179	261
Dry Holes.....	63	34	87	100	212	222
TOTAL.....	153	119	263	311	449	588
Exploratory Wells Drilled, Oils Wells.....	12	3	7	6	7	6
Gas Wells.....	11	22	19	36	21	15
Dry Holes.....	272	323	435	366	265	236
TOTAL.....	295	348	461	408	293	257
TOTAL WELLS DRILLED	488	467	724	719	742	845
TOTAL FOOTAGE DRILLED	1,969,583	1,735,222	2,300,075	1,834,288	2,173,519	2,467,838
AVERAGE DEPTH OF ALL WELLS.....	4,396	3,716	3,177	2,551	2,929	2,921

SUMMARY OF DRILLING BY COUNTIES — 1975

STATE OF MONTANA

County	Wildcats			Development			Total Wells	Footage Drilled	Average Depth
	Dry	Oil	Gas	Dry	Oil	Gas			
Beaverhead.....	1	0	0	0	0	0	1	13,909	13,909
Big Horn.....	7	0	0	1	3	1	12	35,987	2,999
Blaine.....	30	0	1	36	1	24	92	188,739	2,052
Carbon.....	6	0	0	5	0	4	15	80,206	5,347
Carter.....	7	0	0	0	1	0	8	16,157	2,020
Chouteau.....	2	0	0	9	0	2	13	15,877	1,221
Custer.....	2	0	0	0	0	1	3	6,658	2,219
Daniels.....	3	0	0	0	0	0	3	24,277	8,092
Dawson.....	6	0	0	1	1	0	8	71,245	8,906
Fallon.....	1	0	0	2	7	0	10	92,776	9,278
Fergus.....	11	0	0	10	0	6	27	57,378	2,125
Garfield.....	1	0	0	0	0	0	1	2,202	2,202
Glacier.....	3	0	0	7	12	3	25	73,736	2,949
Golden Valley.....	8	0	1	0	0	0	9	27,538	3,060
Granite.....	2	0	0	0	0	0	2	2,534	1,267
Hill.....	16	0	3	62	0	36	117	186,227	1,592
Liberty.....	4	0	2	14	8	24	52	134,481	2,586
McCone.....	4	1	0	2	3	0	10	66,264	6,624
Musselshell.....	14	1	0	11	9	0	35	128,369	3,668
Petroleum.....	10	0	0	0	1	0	11	34,290	3,117
Phillips.....	10	0	1	6	0	119	136	206,251	1,517
Pondera.....	2	0	2	6	7	9	26	48,381	1,861
Powder River.....	1	0	0	2	4	0	7	32,442	4,635
Richland.....	4	0	0	2	8	0	14	167,908	11,993
Roosevelt.....	7	1	0	0	7	0	15	125,380	8,359
Rosebud.....	16	2	0	14	11	0	43	206,022	4,791
Sheridan.....	7	0	0	1	2	0	10	82,625	8,263
Stillwater.....	3	0	0	8	0	13	24	45,368	1,890
Sweetgrass.....	5	0	1	0	0	0	6	23,265	3,878
Teton.....	10	0	0	3	7	0	20	49,081	2,454
Toole.....	16	0	4	15	12	19	66	137,993	2,091
Valley.....	10	0	0	4	0	0	14	47,194	3,371
Wibaux.....	1	1	0	1	0	0	3	20,440	6,813
Yellowstone.....	6	0	0	0	1	0	7	16,638	2,377
TOTALS.....	236	6	15	222	195	261	845	2,467,838	2,921

CRUDE OIL PRODUCTION 1942 - 1975



GAS PRODUCTION DATA — 1975

Field	County	Producing Formations	1974 Production M.C.F.
NATURAL GAS:			
Bears Den.....	Liberty	Sawtooth & Sunburst	1,825
Big Coulee	Golden Valley & Stillwater	Lakota & Morrison	1,510,941
Black Coulee	Blaine	Eagle	92,667
Black Jack	Liberty	Sunburst, Swift & Blackleaf	416,714
Bowdoin	Phillips & Valley	Bowdoin & Phillips	4,733,630
Bowes	Blaine	Eagle	640,675
Brown's Coulee	Hill	Judith River & Eagle	49,527
Canadian Coulee, North.....	Hill & Liberty.....	Sawtooth	787,242
Cedar Creek	Fallon	Judith River & Eagle	1,731,359
Coal Coulee	Hill	Eagle	136,442
Cut Bank & Reagan.....	Glacier & Toole	Cut Bank & Madison.....	4,291,743
Dry Creek	Carbon	Eagle, Frontier & Greybull.....	696,958
Ethridge	Toole	Bow Island & Swift.....	106,132
Flat Coulee	Liberty	Kbl, Ksb, Jsw, Kbi	191,627
Gold Butte	Toole	Bow Island.....	42
Hardin	Big Horn	Frontier	26,076
Keith Block	Liberty	Bow Island & Sawtooth.....	1,077,588
Kevin-Sunburst	Toole	Sunburst & Sun River.....	521,540
Kicking Horse	Toole	Sun River.....	203,468
Lake Basin	Stillwater	Kf, Ke, Kve, Ktc,	1,115,082
Liscom Creek.....	Custer	Shannon	289,214
Middle Butte	Toole	Blackleaf	21,867
Middle Dry Creek.....	Carbon	Frontier	4,657
Mt. Lilly	Carbon	Madison	197,845
North Clark Fork	Carbon	Lakota	41,286
Plevna	Fallon	Judith River.....	63,966
Pumpkin Creek	Custer	Shannon	454,080
Rapelje	Stillwater	Judith River, Claggett, Eagle & Virgelle	704,373
Sherard.....	Blaine & Chouteau.....	Eagle	2,353,832
South Clark's Fork	Carbon	Greybull	5,884
South Devon.....	Toole	Bow Island.....	144,702
Strawberry Creek.....	Toole	Bow Island.....	50,492
Tiger Ridge.....	Blaine & Hill	Judith River & Eagle	15,719,832
Timber Creek.....	Toole	Sunburst	37,380
Trail Creek	Liberty & Toole	Sunburst	124,335
Utopia	Liberty	Ellis, Sawtooth, & Madison.....	346,745
West Butte	Toole	Sawtooth & Madison	802,795
Whitlash	Liberty	Bow Island, Kootenai, & Swift.....	814,931
SUBTOTAL			40,609,494
Associated Gas:			
Bell Creek.....	Powder	Muddy	449,001
Brush Lake	Sheridan	Red River	139
Cabin Creek	Fallon	Interlake & Red River	619,120
Elk Basin	Carbon	Tensleep	372,823
Fairview	Richland	Red River	393,887
Fred & George Creek	Toole	Sunburst & Swift	16,522
Glendive	Dawson	Red River	393,887
Pine	Dawson, Prairie, Fallon & Wibaux	Interlake & Red River	538,272
Richland Area.....	Richland & Roosevelt	Mm, Dw, Si, Orr,	618,600
TOTAL			43,622,600

	Year 1975 Total Bbls.	Refining Five Year Comparison		
		1971	1972	
Big West Oil Company	1,209,324			
Continental Oil Company	16,471,546			
Farmers Union Central Exchange, Inc.	11,178,056			
Exxon Company	15,100,002	44,996,860	48,464,721	
Phillips Petroleum Company	2,157,556			
Spruce Oil Company	690,142			
Westco Refining Company	1,291,909			
	48,098,535	50,967,206	48,052,776	48,098,535

CALENDAR YEAR 1975

Fields	BIG WEST OIL CO.	CONTINENTAL OIL CO.	EXXON COMPANY	FARMERS UNION	PHILLIPS PETR.CO.	TESORO PETR. CO.	WESTCO REF. CO.	TOTAL
Big Wall		70,441						70,441
Cat Creek		29,465						130,002
Cut Bank	205,574			100,537	1,256,401		1,168,132	2,630,107
Devil's Basin		1,207	81					1,288
Elk Basin		489,977	369,655					1,216,963
F'lat Coulee							123,777	123,777
Fred & George Creek	408,564							408,564
Ivanhoe		34,125						34,125
Keg Coulee		90,922	21,827	21,497				134,246
Kelley			44,081					44,081
Kevin Sunburst	563,851							563,851
Lodge Grass		7,401						7,401
Mason Lake		5,753						5,753
Melstone				16,517	247,670			16,517
Pondera								247,670
Ragged Point		200,935						200,935
Rosebud		142,994						142,994
Richey Southwest						18,120		18,120
Snyder		6,082						6,082
Sumatra & Stensvad		623,523	428,258	920,879				1,972,660
Tule Creek & Others						472,479		472,479
Whitlash					220,425			220,425
Winnett Junction				49,117				49,117
Wolf Springs			15,323					15,323
Volt						196,025		196,025
Total Montana Oil	1,177,989	1,702,825	879,225	1,465,878	1,724,496	686,624	1,291,909	8,928,946
Canadian Oil Imported	31,335	8,960,007	5,605,841	4,339,467	433,060	3,518	---	19,373,228
Wyoming Oil Imported	---	5,808,714	8,614,936	5,372,711	---	---	---	19,796,361
Total Montana, Canadian & Wyoming Oil	1,209,324	16,471,546	15,100,002	11,178,056	2,157,556	690,142	1,291,909	48,098,535

AVERAGE BARRELS PER DAY

	Montana	Canada	Wyoming	Total
Year: 1974	25,537	44,487	61,627	131,651
Year: 1975	24,463	53,077	54,237	131,777

PERCENTAGE OF CRUDE OIL REFINED

	Montana	Canada	Wyoming
Year: 1974	19.40%	35.79%	46.81%
Year: 1975	18.56%	40.28%	41.16%

SUMMARY OF SECONDARY RECOVERY PROJECTS - JANUARY 1, 1976

Field, Formation	Operator	Type of Project	Injection Pattern	Date Injections Commenced	Cumulative Injections 1000's Bbls. or MCF	Dec. 1974 Avg. Daily Inj. Rate Bbls. or MCF	No. of Injection Wells	Source of Injection Media and Remarks
Ash Creek, Shannon	McDermott	Waterflood	Peripheral	10-15-64	1,015	155	2	Parkman
Bell Creek, Unit "A", Muddy	Gary	Waterflood	Peripheral	7- 1-70	61,688	33,085	27	Madison
Bell Creek, Unit "B", Muddy	Gary	Waterflood	Peripheral	11- 1-70	17,744	8,660	13	Madison
Bell Creek, Ranch Creek, Muddy	Gary	Waterflood	Peripheral	7- 1-71	21,561	8,870	13	Madison
Bell Creek, Unit "C", Muddy	Gary	Waterflood	Peripheral	12- 1-71	8,272	6,970	6	Madison
Bell Creek, Unit "O", Muddy	Gary	Waterflood	Peripheral	8-72	11,083	6,727	14	Madison
Bell Creek, Unit "E", Muddy	Gary	Waterflood	Peripheral	8-72	8,017	7,488	16	Madison
Big Wall, Tyler B	Texaco, Inc.	Waterflood	Peripheral	8-20-66	16,325	5,496	2	Produced, Amsden & Tyler
Border, New, Cut Bank	BGSO Co.	Waterflood	Random	6- 1-73	165	233	1	Madison
Border, Old, Cut Bank	BGSO Co.	Waterflood	Random	6- 1-73	484	478	4	Madison
Bowes, Sawtooth	Texaco, Inc.	Waterflood	Random	5-23-61	3,630	605	4	Madison
Cabin Creek, Silluro-Ord.	Shell	Waterflood	Semi-Peripheral	6-12-59	145,308	37,110	31	Produced & Fox Hills
Cat Creek, East Dome, Swift	Moss	Waterflood	Semi-Peripheral	7-30-70	276	306	4	Third Cat Creek
Cat Creek, 1st & 2nd CC (Unit 1)	Farmers Union	Waterflood	Semi-Peripheral	10-10-62	10,325	1,852	7	Third Cat Creek
Cat Creek, 1st & 2nd CC (Unit 2)	Farmers Union	Waterflood	Semi-Peripheral	12- 1-59	17,369	1,010	6	Third Cat Creek
Cat Creek, Mosby, Swift	Farmers Union	Waterflood	Random	7-67	3,383	1,077	5	Third Cat Creek
Cat Creek, Mosby, Amsden	Farmers Union	Waterflood	Random	6- 1-71	41	10	1	Third Cat Creek
Cut Bank, Marina, Cut Bank	BGSO Co.	Waterflood	5-Spot	6-72	1,300	1,139	8	Madison
Cut Bank, Tweedy, Cut Bank	BGSO Co.	Waterflood	5-Spot	6-72	713	239	3	Madison
Cut Bank NE, Cut Bank	Texaco, Inc.	Waterflood	5-Spot	6- 2-63	12,939	987	9	Madison
Cut Bank NW, Cut Bank	Phillips	Waterflood	5-Spot	1-30-62	14,373	1,478	14	Madison
Cut Bank SE, Cut Bank	Union	Waterflood	5-Spot	5-63	29,763	6,053	49	Madison
Cut Bank SW, Cut Bank	Texaco, Inc.	Waterflood	5-Spot	4-62	49,153	6,685	53	Madison
Cut Bank SW, Cut Bank	Phillips	Waterflood	5-Spot	9-62	69,703	17,603	97	Madison
Cut Bank, Lander A	Phillips	Waterflood	Random	4-65	1,406	183	2	Madison
Cut Bank, Lander	Texaco, Inc.	Waterflood	Random	7-64	6,840	1,400	7	Eagle
Cut Bank, McGuinness, Moulton	Union	Waterflood	Random	12-62	3,664	1,030	1	Madison
Cut Bank, Cut Bank	Tesoro	Waterflood	5-Spot	9- 1-71	2,576	2,040	17	Madison
Cut Bank, Two Medicine, Cut Bank	Miami	Waterflood	Random	12-67	38,769	6,326	77	Madison
Cut Bank, West Wilcox, Moulton	Ocella	Waterflood	Random	2-71	14,968	2,409	10	Madison
Cut Bank, Moulton, Moulton	Union	Waterflood Gas Injection	Random Random	11-69 5-15-71	11,164 Shut-in	7,611 --	11 --	Water Inj. Into Madison Gas Inj. Into Moulton
Qarling, State, Moulton	BGSO Co.	Waterflood	Random	2-67	2,365	420	1	Madison
Qarling, NE Unit, Moulton	Ralph Fair	Waterflood	Random	2-68	4,399	1,280	4	Produced Water
Qarling, South Swenson, Moulton	BGSO Co.	Waterflood	Random	2-67	7,166	734	2	Madison
Dwyer, Ratcliffe	Phillips	Waterflood	Peripheral	10-68	1,356	204	5	Madison
Elk Basin, Embarras-Tensleep	Amoco	Gas Injection	Random	12-72	2,258 M	34 MCF	1	Produced Gas
Elk Basin, Frontier	Amoco	Waterflood	Random	1926	2,251	992	2	Madison
Elk Basin, Unit 2, Tensleep	Amoco	Waterflood	Random	1949	2,171	1,100	1	Produced Water
Elk Basin, Madison	Amoco	Waterflood	Peripheral	1962	55,207	14,278	8	Produced Water
Elk Basin NW, Tensleep	Atlantic-Richfield	Waterflood	Semi-Peripheral	5-67	3,622	1,942	2	Madison
Fairview, NW Unit, Red River	Superior	Gas Injection	Crestal	10-25-67	2,573 M	689 MCF	1	Purchased Gas
Flat Coulee, Swift	Cardinal	Waterflood	Peripheral	2- 1-72	2,846	1,986	15	Eagle
Flat Lake, Ratcliffe	Chevron	Waterflood	Random	6- 1-71	10,834	7,750	11	Produced Water
Frannie, Tensleep	Continental	Waterflood	Random	9-70	1,807	848	1	Produced Water
Fred & George, Sunburst	Fulton	Waterflood	Random	7-70	12,468	8,102	2	Madison & Eagle
Gas City, Red River	Shell	Waterflood	Semi-Peripheral	10-31-69	7,304	4,486	6	Kission Canyon
Goose Lake, Ratcliffe	Cotton Petroleum	Waterflood	Semi-Peripheral	1-73	3,771	4,962	5	Produced Water
Jim Coulee, Tyler B	McAlester Fuel	Waterflood	Semi-Peripheral	6- 1-72	3,569	4,212	5	Third Cat Creek
Keg Coulee, NW Unit, Tyler B	Ada Oil	Waterflood	Semi-Peripheral	8-31-66	4,903	590	1	Madison
Keg Coulee, East, Tyler	Continental	Waterflood	Semi-Peripheral	12-24-69	3,364	257	3	Third Cat Creek
Keg Coulee, South, Tyler	BGSO Co.	Waterflood	Semi-Peripheral	1- 1-70	1,771	1,306	2	Madison
Kelley, Tyler	McAlester Fuel	Waterflood	Random	7-69	1,585	820	3	Third Cat Creek
Kevin-Sunburst, Madison	Lon Crumlay	Waterflood	Random	9-63	0	0	2	Madison
Kevin-Sunburst, Madison	BGSO Co.	Waterflood	Random	8-64	5,538	1,447	6	Madison
Kevin-Sunburst, Madison	Texaco, Inc.	Waterflood	Semi-Peripheral	8-64	8,379	1,339	10	Madison
Little Beaver, Red River	Shell	Waterflood	Semi-Peripheral	8- 7-66	22,905	6,251	13	Madison
Little Beaver East, Red River	Shell	Waterflood	Semi-Peripheral	4-65	9,449	1,829	6	Madison
Lookout Butte, Red River	Shell	Waterflood	Semi-Peripheral	4-67	19,048	6,943	12	Kimmelusa
Lookout Butte, Madison	Shell	Waterflood	Semi-Peripheral	2-69	1,806	933	1	Kimmelusa
Monarch, Sillurian	Shell	Waterflood	Random	12- 1-73	104	0	3	Silluro-Ord.
Pennel, Red River	Shell	Waterflood	Random	6-28-69	43,530	26,196	45	Dakota and Produced
Pine, South, Red River	Shell	Waterflood	Semi-Peripheral	3-59	128,531	28,920	36	Fox Hills and Produced
Pine, North, Red River	Shell	Waterflood	Semi-Peripheral	3-68	13,603	4,998	11	Lodgepole
Prichard Creek, Sunburst	Fulton Producing	Waterflood	Random	4-73	230	0	0	Eagle
Ragged Point, Tyler	BGSO Co.	Waterflood	Semi-Peripheral	12- 3-66	5,859	1,052	4	Third Cat Creek
Reagan, Madison	Union	Gas Injection	Random	8-61	4,358 M	200	2	Gas Injection
Red Creek, Cut Bank	Exxon	Waterflood	5-Spot	6-65	9,738	2,551	6	Madison
Richey SW, Interlake	Atlantic-Richfield	Waterflood	Random	12-65	2,174	203	1	Fox Hills
Stensvad, Tyler	Ada Oil	Waterflood	Semi-Peripheral	2-63	26,100	4,244	7	Madison
Sumatra, West, Tyler	Continental	Waterflood	Semi-Peripheral	10-68	12,879	5,641	9	Madison
Sumatra, Central, Tyler	Texaco, Inc.	Waterflood	Semi-Peripheral	9-16-69	45,223	26,973	18	Madison
Sumatra, NE, Tyler	Texaco, Inc.	Waterflood	Semi-Peripheral	9-16-69	3,230	1,128	4	Madison
Sumatra, SE, Tyler	BGSO Co.	Waterflood	Semi-Peripheral	12- 1-69	6,907	3,479	7	Madison
Sumatra, Grebe, Tyler	Farmers Union	Waterflood	Random	6-16-75	14	86	1	Third Cat Creek
Willow Creek, North, Tyler B	Resources Investment	Waterflood	Random	6- 1-72	120	159	1	Produced

OIL AND GAS DISCOVERIES IN 1975

County	Operator-Well Name and Location	Field	Total Depth	Initial Oil, B/O	Potential Gas, MCF	Producing Formation	Date Completed
Blaine	Industrial Energy, Kuhr 34-24, SW SE 24-29N-21E	Unnamed	1,559		Shut-in	Eagle	5-28-75
Golden Valley	West Gas, 7-T Land & Livestock 2-7, SW NW NE 27-5N-17E	Unnamed	1,924		Testing	Eagle	1- 1-75
Hill	Oil Resources, Larson 19-4, SE NW NW 19-35N-13E	Unnamed	3,925		53	Greenhorn	3- 3-75
	Pengo Petroleum, USA 1-11, SW NE SW 11-37N-12E	Unnamed	1,280		Shut-in	Eagle	1- 3-75
	Wainoco, Clark 1-25, S $\frac{1}{2}$ SW $\frac{1}{4}$ 25-36N-15E	Unnamed	1,540		Shut-in	Eagle	11-15-75
Liberty	Jerry Branch, Oswood 8-33, SW SE NE 33-36N-4E	Unnamed	1,620		Shut-In	Sunburst	10-24-75
	Apache, Spicher 14-1, NW SE 14-31N-7E	Unnamed	3,329		Shut-in	Bow Island	4-29-75
McCone	Kewanee, BN 'A' QJ1 1, NW NE 11-22N-47E	Unnamed	6,438	285		Kibbey	12- 8-75
Musselshell	Koch Exploration, Hochmuth 1, S $\frac{1}{2}$ SW $\frac{1}{4}$ 1-9N-24E	Unnamed	5,880	30		Amsden	12-20-75
Phillips	Midlands Gas, Federal 1770-1, NW SE NW 17-37N-30E	Unnamed	1,900		82	Phillips	8- 5-75
Pondera	Balcron, State 1-A, N $\frac{1}{2}$ S $\frac{1}{2}$ SE $\frac{1}{4}$ 16-29N-2W	Unnamed	1,217		Shut-in	Bow Island	5-22-75
	Brownlie, Larson 1, C SW SW 34-28N-6W	Unnamed	3,265		125	Madison	--
Roosevelt	Pennzoil, Longee 1, NE NE 32-31N-49E	Unnamed	9,485	28		Charles	8- 8-75
Rosebud	Petro-Lewis, State 12-31, Lot 6, 31-12N-33E	Unnamed	5,759	407		Tyler	10-26-75
	Oyco Petroleum, Schock 1, Lot 21, 4-11N-32E	Unnamed	5,705	720		Tyler	10-30-75
Sweetgrass	West Gas, Cremer 5-8, SW NW 8-3N-18E	Unnamed	2,265		100	Judith River	--
Toole	Croft Petroleum, State 1, NE SW SW 9-34N-2E	Unnamed	1,937		Shut-in	Bow Island	9-20-75
	Marquis Petroleum, McCarter 14-2, NW NE 14-32N-1W	Unnamed	1,375		Shut-in	Bow Island	10- 3-75
	Croft Petroleum, State 1, SW NE 16-34N-2E	Unnamed	1,401		Shut-in	Oakota	--
	True Oil, Wallewein 24-6, SE SW 6-35N-1E	Unnamed	2,255		Shut-in	Sunburst	12-31-75
Wibaux	J.P.C. Corp., BN 34-27, SW SE 27-11N-58E	Unnamed	9,590	120		Red River	4-23-75

SIGNIFICANT EXTENSIONS ^{1/} AND NEW PAY ZONES ^{2/} IN 1975

Blaine	Montana Power, Federal 16-7-26-21, NW SE SE 7-26N-21E	Unnamed ^{1/}	2,047		Shut-In	Judith River	11-22-75
Fallon	Juniper Petroleum, BN 32-25, C SW NE 25-10N-58E	Cupton ^{1/}	9,505	15		Red River	4-17-75
Liberty	Fulton Producing, Orr 41-21, SE NE NE 21-37N-4E	Whitlash ^{2/}	2,226		Shut-In	Madison	--
Musselshell	McAlester Fuel, BN 3-16, SE SE 3-10N-27E	Little Wall ^{1/}	3,880	57		Tyler B	4-19-75
Phillips	Midlands Gas, Fee 2970-1, NW SE NW 29-37N-30E	Unnamed ^{1/}	1,826		258	Bowdoin	12- 5-75
Richland	Pennzoil Company, Tveit 3, SE NW 19-25N-58E	Sioux Pass ^{2/}	12,799	180		Mission Canyon	3-22-75

OIL AND GAS FIELDS

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
ANTELOPE Swift (U. Jur.)	3	Structural	Water Drive	(Listed as part of Cat Creek Field.)	None
ARCH APEX Bow Island (L. Cret.) Gas Swift (Jurassic) Gas	8 3 (Shut-in)	Strat. Strat.	Volumetric Volumetric	330' from legal subdivision; 2400' from any other drilling or producible gas well producing from the same reservoir; 75' topographic tolerance. (Order 4-60.) (Sometimes called Colorado Blackleaf pool.) (Swift) Statewide.	None
ASH CREEK Shannon (U. Cret.)	3	Structural	Partial Water Drive and Depletion	Spacing waived within utilized portion of field except no well may be drilled closer than 660' from unit boundary. (Order 4-65.)	Waterflood started October, 1964. (Orders 22-64, 15-66.)
BAINVILLE Red River (Ord.)	1	Structural-Strat.	Depletion-Water Drive	State-wide.	Produced water disposed into Red River formation. (Order 7-A-75).
BANNATYNE Swift (U. Jur.) Sun River (U. Miss.)	3 1 (Shut-in)	Structural	Comb. Water Drive and Volumetric	Center of 10-acre tracts, 50' topographic tolerance. Commingling permitted. (Order 20-58.)	Pilot waterflood of Swift suspended in 1963.
BEARS DEN Sunburst (L. Cret.) Gas Swift (U. Jur.) Oil Sawtooth (Jur.) Gas	3 5 1 (Shut-in)	Structural	Depletion and Gas Cap Drive	State-wide.	None
BELL CREEK Muddy (L. Cret.) Oil & Gas Gas	188 4	Strat.	Depletion	Originally 40-acre spacing units with location 660' from unit boundary with 150' tolerance for topographic reasons only. (Order 37-67, 39-67, 50-67, 1-69, 17-70.) Field now unitized.	Six areas unitized (Unit "A", "B", Ranch Creek, "C", "D", and "E.") Floods use Madison water. (Orders 7-70, 23-70, 8-71, 26-71, 35-71, 36-71.)
BELL CREEK SOUTHEAST Muddy (L. Cret.) Gas	4	Strat.	Depletion	160-acre spacing units, wells 660' from spacing boundary. (Order 31-72.)	None
BENRUD Nisku (Dev.)	1 1 (Shut-in)	Structural	Water Drive	160-acre spacing units with permitted location within a 1320' square in center of quarter section. (Order 6-65.)	Water disposal into Judith River formation. (Order 64-62.)

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
BENRUD, EAST Nisku (Dev.)	3	Structural	Water Drive	Same as Benrud Field. (Order 6-65.)	Water disposal into Judith River formation. (Order 64-62, 32-66.)
BENRUD, NORTHEAST Nisku (Dev.)	1	Structural	Water Drive	Same as Benrud Field. (Order 6-65.)	Water disposal into Judith River formation. (Order 32-66.)
BERTHELOTE Sunburst (L. Cret.)	1 (Shut-in)	Strat.	Depletion	40-acre spacing units with well no closer than 330' from lease or property line and no closer than 660' between wells. (Order 18-66.)	None
BIG COULEE 3rd Cat Creek (L. Cret.) Gas Morrison (U. Jur.) Gas	5 1	Structural Structural	Water Drive Water Drive	State-wide.	None
BIG MUDDY CREEK Interlake (Sil.) Red River (Ord.)	1 3	Structural	Water Drive	One well per 320 acre spacing unit with well no closer than 660 feet from boundary of four east-west units. (Order 4-75.)	None
BIG WALL Amsden (Penn.) Tyler (Penn.)	1 1 13 4 (Shut-in) (Shut-in)	Structural Struct.- Strat.	Water Drive Depletion	Spaced by old state-wide spacing; 330' from lease or property line, 990' between wells in same reservoir. (Order 12-54.)	Previous disposal into Tyler "A" stopped in 1961. Waterflood of Tyler "B" sand started August, 1966. (Order 22-66.)
BLACK COULEE Eagle (U. Cret.)	4	Structural- Strat.	Water Drive	One well per 320-acre spacing unit, two adjacent quarter sections, direction operator's option. Wells to be at least 990' from unit boundary. (Order 6-73.)	None
BLACKFOOT Cut Bank (L. Cret.) Sun River (Miss.)	4 7 (Shut-in)	Strat. Structural	Depletion Water Drive	One well only per 40-acre spacing unit, 300' tolerance from center of spacing unit. Dual completion in Cut Bank and Madison with administrative approval. (Order 3-57.)	None
BLACK JACK Sunburst (L. Cret.) Gas Swift (U. Jur.) Gas & Oil Blackleaf (U. Cret.) Gas	10 2 1	Strat.	Depletion	One gas well per 160-acres, no closer than 660' from boundary of each unit. (Order 3-69.) State-wide spacing. Order 3-69 amended to include Blackleaf in spacing and field rules for gas. (Order 4-74.) Blackleaf gas pooled (Order 3-75).	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
BORDER Cut Bank (L. Cret.) Oil & Gas	8	Strat.	Depletion	Oil: Unitized into New and Old Border fields. Unitized 6-1-73. (Orders 8-73, 9-73.) Gas: 330' from boundary of legal subdivision. 2,400' between wells in same formation on same lease. 75' topographic tolerance. (Order 7-54.)	Waterflood approved. (Orders 8-73, 9-73.)
BOWDOIN Bowdoin & Phillips sands in Colorado Shale (U. Cret.) Gas (Shut-in) *Gas wells outside boundary.	347 *69 69	Structural	Volumetric	One well per quarter section not less than 1000' from lease boundary or less than 2000' from any gas well in same horizon. (Order 29-55.) Unitized 1958. Delineated: (Order 3-72.)	None
BOWES Eagle (U. Cret.) Gas	26	Structural	Volumetric	660' from boundary of legal subdivision, 1320' from other wells in same formation. 75' topographic tolerance. (Order 23-54.) Order 23-54 amended by establishing 160-acre Eagle spacing units in Sec. 5, 6, 7, 8, 17, 18-31N-19E. (Order 44-75).	None
Sawtooth (M. Jur.) Oil (Shut-in)	51 25	Structural	Partial Water Drive	330' from lease or property line, 990' between wells in the same formation. (Order 13-54.)	Pilot waterflood initiated in 1961 and expanded to fieldwide waterflood in 1965. (Order 5-61.) Water from Madison.
BRADLEY Sun River (Miss.) (Shut-in)	1 1	Structural	Water Drive	State-wide.	None
BRADY Sunburst (L. Cret.) (Shut-in)	1	Strat.	Depletion Partial Water Drive	10-acre spacing units with 75' topographic tolerance from center of spacing unit. (Order 34-62, 55-62.)	None
BRORSON Mission Canyon (Miss.) Oil & Gas Red River (Ord.) Oil & Gas	4 5	Structural	Volumetric, Water Drive	One well per 160-acre unit, no closer than 660' from unit boundary (Mission Canyon and Red River). (Order 5-69.) Gas to Brorson Field plant.	None
BRORSON, SOUTH Red River (Ord.) Oil & Gas	3	Structural	Volumetric, Water Drive	One well per 160-acre unit, no closer than 660' from unit boundary. (Order 26-68.) Gas to Brorson Field plant.	None
BROWN'S COULEE Judith River (U. Cret.) Gas Eagle (U. Cret.) Gas	3	Structural	Volumetric	One well per 160-acre unit with well location no closer than 660' from unit boundary. Commingling permitted with administrative approval. (Order 7-74.)	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
BRUSH LAKE Red River (Ord.) Oil & Gas (Shut-in)	5 2	Structural-Strat.	Depletion Water Drive	320-acre spacing with initial nine spacing units described in (Order 15-71 corrected).	None
BULLWACKER Judith River (U. Cret.) Gas Eagle-Virgelle (U. Cret.) Gas	28	Structural	Volumetric	One well per 320-acre spacing unit with well location no closer than 660' from unit boundary & 990' from field boundary. (Order 26-74.)	None
BURNS CREEK Red River (Ord.)	1	Structural	Depletion Water Drive	State-wide.	None
CABIN CREEK Mission Canyon (Miss.) Oil & Gas (Shut-in)	14 4	Structural	Water Drive Depletion	Spacing waived and General Rules No. 213 (Deviation), 218 (Commingling) and 219 (Dual Completion) are suspended until present Unit Agreement becomes inoperative. (Order 36-62.) Many wells produce from both Interlake and Red River by dual completions. Gas through extraction plant.	Waterflood of Siluro-Ordovician reservoir has been expanded to full scale peripheral flood. (Orders 60-62, 30-63.)
Interlake-Red River Oil & Gas (Sit.) (Ord.)	69	Structural	Water Drive, Depletion		
CANADIAN COULEE, NORTH Sawtooth (M. Jur.)	2	Structural-Strat.	Volumetric	640-acre spacing unit. Location to be no closer than 1650' to section line. (Order 15-74.)	None
CANAL Red River (Ord.)	1	Structural	Water Drive Depletion	320-acre spacing units consisting of East half and West half of governmental section. (Order 34-70.)	None
CAT CREEK Kootenai (L. Cret.) (3 sands) Morrison (U. Jur.) Ellis (U. Jur.) Amsden (Penn.)	32 4 2 9 7 1	Structural-Strat. Structural-Strat. Structural Structural-Strat.	Water Drive Water Drive Depletion- Water Drive Water Drive	220' from lease or property line, 440' from every other well in same formation. (Order 17-55.) Five separate producing areas, East, Antelope, Mosby, West and Landheim Domes. State-wide.	Three Kootenai, two Ellis, and one Amsden waterfloods in progress. (Orders 17-56, 18-59, 13-62, 8-68, 38-70, 11-71.) Water from Third Cat Creek sand. Waterflood modified. (Order 29-74.)
CEDAR CREEK Judith River (U. Cret.) Gas Eagle (U. Cret.) Gas	179 60	Structural Structural	Volumetric Volumetric	1200' from legal subdivision line, 2400' from every other well in same formation. (Order 33-54.) 320-acre spacing units. Wells in center of NW¼ and SE¼ of each section with 200' topographic tolerance. (Order 1-61.)	None None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
CHELSEA CREEK Nisku (Dev.)	1	Structural	Water Drive	State-wide.	None
CLARK'S FORK Frontier (U. Cret.)	1	Structural-Strat.	Depletion	330' from quarter-quarter section line, 1320' between wells with 75' topographic tolerance. (Order 17-54.)	None
CLARK'S FORK, NORTH Lakota (L. Cret.) Gas	2	Structural-Strat.	Volumetric	160-acre quarter section spacing with location no closer than 660' from spacing unit boundary. (Order 23-75).	None
CLARK'S FORK, SOUTH Greybull (L. Cret.) Oil & Gas Shut-in)	1	Structural-Strat.	Depletion-Water Drive	160-acre spacing, location no closer than 330' from quarter section line or 1320' from any other well.	None
COAL COULEE Eagle (U. Cret.) Gas	3	Structural-Strat.	Volumetric	State-wide.	None
CONRAD, SOUTH Dakota (L. Cret.)	1	Strat.	Depletion	10-acre spacing units. Wells in center of each unit with 75' topographic tolerance. (Orders 34-62, 31-63.)	None
COW CREEK Charles (Miss.)	2	Structural	Water Drive	80-acre spacing units, direction at option of operator but wells to be in SW $\frac{1}{4}$ and NE $\frac{1}{4}$ of each quarter section. (Order 11-69.)	None
COW CREEK, EAST Kibbey (Miss.)	6 1	Structural	Water Drive	40-acre spacing units consisting of quarter-quarter section with permitted well to be at center with 150' topographic tolerance. (Order 35-74.)	Produced water disposed into Dakota formation. (Order 30-A-75).
CULBERTSON Red River (Ord.)	1	Structural-Strat.	Depletion-Water Drive	State-wide in part. Unitized as to SE $\frac{1}{4}$ of Section 32, SW $\frac{1}{4}$ of Section 33, N $\frac{1}{2}$ NW $\frac{1}{4}$ of Section 4, and N $\frac{1}{2}$ NE $\frac{1}{4}$ of Section 5. (Order 29-70.)	None
CUPTON Red River (Ord.)	10	Structural-Strat.	Water Drive	160-acre quarter section spacing units. Location no closer than 660' from spacing unit boundary. (Order 4-72.)	None
CUT BANK Kootenai (L. Cret.) Oil & Gas	948	Strat.	Depletion	(Kootenai formation includes Moulton, Sunburst, and Cut Bank sands.) Oil: 330' from legal subdivision line. 650' between wells in same formation. 5-spot on 40-acre tract permitted. 75' topographic tolerance. (Order 10-54.) Gas: 330' from legal subdivision, 2400' between wells in same formation. 75' topographic tolerance. (Order 10-54.)	There are 19 waterfloods in progress. Water from Eagle and Madison, or produced. Produced water disposed into Madison formation. (Order 22-A-74.)
Madison (Miss.) Oil & Gas (Gas only)	28 29	Strat.	Water Drive	Sections 20, 29, and 32 of Township 36 North, Range 4 West spaced 320-acres (N $\frac{1}{2}$ & S $\frac{1}{2}$). (Order 26-70.)	

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
DARLING (Included as part of Cut Bank Field)					
DEAN DOME Greybull (L. Cret.) Gas Oil	1 1	Structural	Water Drive	State-wide. Oil ring below gas cap.	None
DEER CREEK Interlake (Sil.)	1 4	Structural	Water Drive	80-acre spacing units consisting of any two adjacent quarter-quarter sections. Well location in NE $\frac{1}{4}$ and SW $\frac{1}{4}$ of each quarter section with 75' topographic tolerance. (Orders 23-55 & 14-59.) Commingling of production permitted upon approval of Commission Petroleum Engineer. (Order 18-63.)	Excess produced water is disposed into Dakota and Lakota formations. (Orders 6-56 & 3-58.) Two Silurian wells shut-in.
Red River (Ord.)	2	Structural	Water Drive		
DELPHIA Amsden (Penn.)	1	Structural	Water Drive	State-wide.	None
DEVIL'S BASIN Heath (U. Miss.)	3	Structural	Depletion	State-wide.	None
DEVON Blackleaf (U. Cret.) Gas Kootenai (L. Cret.) Oil	23	Strat. Strat.	Volumetric Depletion	State-wide. State-wide.	None None
DEVON, SOUTH Bow Island (L. Cret.) Gas	1 9	Strat.	Volumetric	Drilled on state-wide spacing. Unitized for primary production. (Order 28-71, corrected).	None
DRY CREEK Eagle (U. Cret.) Gas Judith River (U. Cret.) Frontier (U. Cret.) Gas Greybull (L. Cret.) Gas, Greybull (L. Cret.) Oil	1 1 7 3 1	Structural- Strat. Structural Structural- Strat.	Volumetric Volumetric Volumetric- Depletion	State-wide. Field re-delineated. (Order 8-70.) Six additional gas storage wells, west end of structure.	None
DRY CREEK MIDDLE Frontier (U. Cret.) Gas	1	Structural- Strat.	Volumetric	320-acre spacing units consisting of two adjacent governmental quarter sections lying N-S or E-W at operator's option with permitted well no closer than 660' from spacing boundary (Order 25-75.)	None
DWYER Ratcliffe (Miss.)	10 4	Structural- Strat.	Water Drive- Volumetric	160-acre spacing units; well location in center of SE $\frac{1}{4}$ of spacing unit with 175' topographic tolerance. (Orders 25-60, 29-61.)	Produced water disposed into Dakota formation. (Order 26-63.) Waterflood. (Order 20-68.)
EAST KEITH & KEITH Bow Island (L. Cret.) Gas Dakota (L. Cret.) Sawtooth-Madison (Jur.-Miss.) Gas	7 1 5	Structural	Water Drive	State-wide, except unitized portions spaced by (Order 22-62). Pooling (Order 19-66).	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
ELK BASIN (Mont. Portion)					
Frontier (U. Cret.)	14	Structural	Gravity	Rule No. 203 (Spacing) is waived within Unit Area. (Order 10-61.) Gas to Elk Basin gasoline plant.	Frontier: Water injection. (Order 1-72.) Embar - Tensleep; pressure maintenance by crestal gas injection. Waterflood approved in 1966. (Order 5-66.) Madison: Water injection (Order 17-61.)
(Shut-in)	12				
Embar-Tensleep (Perm., Penn.)	18	Structural	Drainage		
Oil and Gas (Shut-in)	14				
Madison (Miss.)	20	Structural	Water Drive		
(Shut-in)	1				
ELK BASIN, NORTHWEST					
Frontier (U. Cret.)	5	Structural	Depletion	Spacing waived within unitized portion except that bottom of hole be no closer than 330' from unit boundary and there be at least 1320' surface distance between wells in same formation; 75' topographic tolerance. (Orders 43-63, 28-64.) Gas to Elk Basin gasoline plant.	Frontier: Waterflood in progress. Embar - Tensleep: Waterflood. (Order 3-67.) Madison, produced water.
(Shut-in)	4				
Embar-Tensleep (Perm., Penn.)	4	Structural	Gravity		
Oil and Gas			Drainage		
Madison (Miss.)	2	Structural	Water Drive		
ETHRIDGE AREA					
Bow Island (L. Cret.) Gas (Shut-in)	3	Strat.	Water Drive	State-wide.	None
Swift (U. Jur.) Gas (Shut-in)	5	Strat.	Water Drive	State-wide, except two wells by (Order 28-65).	
	1				
FAIRVIEW					
Winnipegosis (Dev.) Oil & Gas	1	Structural	Water Drive	160-acre spacing unit. Well location anywhere in spacing unit but no closer than 660' from unit boundary. (Order 48-65, 1-67, 43-67, 44-67.) Gas to Fairview plant.	Northwest part of field unitized for gas injection. Gas from Fairview and Brorson fields. (Order 11-70.) Salt water disposal into Dakota. (Orders 9-A-71, 24-A-71.)
Red River (Ord.) Oil & Gas	8	Structural	Water Drive		
FERTILE PRAIRIE					
Red River (Ord.)	2	Structural-Strat.	Water Drive	80-acre spacing units consisting of north-south rectangular units. Well location in NW ¹ / ₄ and SE ¹ / ₄ of quarter section with 75' topographic tolerance. (Orders 3-56, 7-62.)	None
FLAT COULEE					
Bow Island (L. Cret.) Gas (Shut-in)	3	Structural	Depletion	330' from boundary of legal subdivision and 1320' from other wells in same reservoir. (Order 16-55.) State-wide, exception (Order 11-66.) State-wide gas spacing. 40-acre spacing units. Well in center of spacing unit with 150' topographic tolerance. (Orders 16-62, 19-63.) State-wide.	Waterflood unit and redelination approved for Swift sandstone. (Orders 13-71, 17-A-71, 22-71.)
Dakota (L. Cret.) Gas (Shut-in)	1	Strat.	Depletion		
Swift (Jur.) Gas (Shut-in)	1	Strat.	Depletion		
Swift (Jur.) Oil	20	Strat.	Depletion		
(Shut-in)	1	Strat.	Depletion		
Sunburst (Jur.) Gas	1	Strat.	Depletion		
Sawtooth (Jur.) Gas (Shut-in)	1				

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
FLAT LAKE Nesson (Miss.)	1	Strat.	Partial Water Drive	160-acre spacing units; well location in center of NE¼ of quarter section with 200' topographic tolerance. Wells no closer than 961' to North Dakota state line and no closer than 1600' to Canadian line. (Orders 10-65 amended, 43-65, 23-66, 33-66.)	Excess salt water disposed into Muddy, Dakota, or Lakota formations. (Orders 39-64, 39-66.) Unit operation for eastern part of field. (Order 7-71.) Unit operation for western part of field. (Order 32-74.)
Ratcliffe (Miss.)	51	Structural-Strat.	Partial Water Drive		
FLAT LAKE, SOUTH Ratcliffe (Miss.)	3	Structural-Strat.	Partial Water Drive	Same as Flat Lake spacing. (Order 2-67.)	Excess salt water disposed into Muddy, Dakota, or Lakota. (Order 19-67.)
FOUR MILE CREEK Red River (Ord.)	1	Structural	Depletion	320-acre spacing units. (Order 43-75).	None
FRANNIE (Mont. Portion) Tensleep (Penn.)	1	Structural	Comb. Water Drive and Gravity Drainage	10-acre spacing units; well location in center of each unit with 100' topographic tolerance. (Order 35-63.)	Unitized for waterflood of Phosphoria-Tensleep formations using produced fluids. (Order 21-70.)
FRED & GEORGE CREEK Sunburst (L. Cret.) Oil & Gas (Shut-in) Swift (U. Jur.) Oil & Gas	14 2 15	Strat. Strat.	Depletion Depletion	Oil: 40-acre spacing units; well location in center of unit with 250' topographic tolerance. (Orders 29-63, 1-65.) State-wide.	Sunburst waterflood initiated July, 1970, using water from Madison, (Order 13-70) and Eagle water. (Order 27-71.)
FROID, SOUTH Red River (Ord.)	1	Structural-Strat.	Depletion	State-wide.	None
FT. GILBERT Red River (Ord.)	2	Structural-Strat.	Depletion	State-wide.	None
GAGE Amsden (Penn.)	1	Structural	Water Drive	State-wide.	None
GAS CITY Red River (Ord.)	17	Structural	Depletion-Water Drive	80-acre spacing units consisting of E½ and W½ of quarter sections; well location in NW¼ and SE¼ of quarter section; 150' topographic tolerance. Spacing waived and state-wide Rules 213 (Deviation), 218 (Commingling) and 219 (Dual Completion) are waived in unitized portion of field. (Order 29-62.)	Excess produced water disposed into Judith River formation. (Orders 32-61, 20-64.) Waterflood using produced water and Madison water. (Order 16-69.)
GIRARD Red River (Ord.)	1	Structural-Strat.	Depletion-Water Drive	State-wide.	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
GLENDIVE Red River (Ord.) Oil & Gas (Shut-in)	15 1	Structural-Strat.	Depletion-Water Drive	80-acre spacing units consisting of any two adjacent quarter-quarter sections; wells located in center of NE 1/4 and SW 1/4 of each quarter section with 75' topographic tolerance. (Orders 27-55, 19-62, 58-62, 20-66.)	Excess produced water disposed into Swift, Dakota and Judith River formations. (Orders 16-56, 16-63, 40-A-70.)
GOLD BUTTE Bow Island (L. Cret.) Swift (U. Jur.) Gas	1 1	Structural Structural	Water Drive? Water Drive?	640-acre spacing, well location any quarter-quarter section cornering on center of section. (Order 26-59.)	None
GOLDEN DOME Eagle (U. Cret.) Gas	2	Structural-Strat.		160-acre spacing; 660' from spacing unit boundary.	None
GOOSE LAKE Ratcliffe (Miss.) Oil & Gas (Shut-in)	29 4	Structural-Strat.	Partial Water Drive	Unitized. (Order 17-72.)	Excess produced water disposed into Mission Canyon and Dakota formations. (Orders 12-64, 14-66, 12-68.)
GRABEN COULEE Sunburst (L. Cret.) Cut Bank (L. Cret.) Cut Bank-Madison (Dual)	1 32 3	Structural-Strat. Structural-Strat. Structural-Strat.	Depletion Depletion Depletion	40-acre spacing units; well location no closer than 330' from legal subdivision. (Cut Bank and Madison) Oil: 330' from boundary of legal subdivision and 650' from any other well in same reservoir and on same lease. 75' topographic tolerance. (Order 73-62.)	None
GRANDVIEW Bow Island (L. Cret.) Gas (2 Zones) Madison (Miss.) Gas	5 1	Structural Structural	Unknown Unknown	320-acre spacing units aligned in a north-south direction; well locations no closer than 660' to a spacing unit boundary. (Order 49-67.) Dual completion with Bow Island.	None
GUMBO RIDGE Tyler (L. Penn.)	5	Structural-Strat.	Unknown	State-wide.	None
GYPSY BASIN Sunburst (L. Cret.) Oil & Gas Swift (U. Jur.)	4 1	Structural-Strat. Structural-Strat.	Comb. Water Drive and Depletion Comb. Water Drive and Depletion	330' from lease lines and 660' between wells in same formation. Only two wells per quarter-quarter section. (Order 7-66.) Same as Sunburst	Order 6-64 permits injection of excessive gas (produced with oil) into the Sunburst gas cap.

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
Sawtooth-Madison (Jur. & Miss.) Oil & Gas	2	Structural-Strat.	Comb. Water Drive and Depletion	(Sawtooth-Madison) Oil: 40-acre spacing units; wells no closer than 330' from lease line. (Order 7-66.) (Sawtooth-Madison) Gas: 160-acre spacing units; well locations in center of any quarter-quarter section in each 160-acre unit, 2340' between gas wells. 150' topographic tolerance. (Order 13-59.)	
HARDIN Frontier (U. Cret.) Gas (Shut-in)	17 31	Strat.	Volumetric	State-wide.	None
HAVRE Eagle (U. Cret.)	1	Structural-Strat.	Water Drive Depletion	State-wide. Single well used in town of Havre.	None
HAY CREEK Mission Canyon (Miss.)	1	Structural	Depletion	State-wide.	
Red River (Ord.)	2	Structural	Volumetric Water Drive	320-acre spacing, any two adjacent quarter sections, direction to be determined by operator. Location no closer than 660' from unit boundary. (Orders 15-69, 27-73.) Gas to Brorson plant.	Water disposal into Red River. (Order 20A-70.)
HIAWATHA Tyler (L. Penn) (2 sands)	4	Structural-Strat.	Depletion	State-wide.	None
HIBBARD Amsden (Penn.)	1	Unknown	Water Drive	State-wide.	None
HOWARD COULEE Tyler (L. Penn.)	1	Structural-Strat.	Unknown	State-wide.	None
INJUN CREEK Tyler (Penn.) Abandoned.	0	Strat.	Depletion	State-wide.	None
IVANHOE Morrison (U. Jur.)	2	Structural-Strat.	Depletion	40-acre spacing unit for production from any one common formation; well location in center of unit with 200' topographic tolerance. (Order 7-60 and 9-56).	Waterflood of Tyler B & C sands discontinued.
Amsden (L. Penn.) (Shut-in)	1	Structural Strat.	Water Drive		
Tyler (L. Penn.)	9	Structural-Strat.	Depletion		

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
JIM COULEE Tyler (L. Penn.)	18	Structural Strat.	Depletion Water Drive	Unitized (Order 18-72.) No well closer than 330' from unit boundary.	Waterflood; produced and Third Cat Creek water.
KEG COULEE Tyler (Penn.) Oil & Gas (Shut-in)	18 5	Strat.	Depletion	40-acre spacing in southwest portion of field except that spacing is waived in unitized portion. (Orders 3-64, 4-64, 23-64.) 80-acre spacing in remainder of field with variable pattern. (Orders 11-60, 28-62.) (40-acre spacing: W½ E½ and W½ Sec. 35-11N-30E; NW¼ Sec. 2-10N-30E). (Order 23-72). Topographic tolerance varies from 100' to 250'. (Orders 11-60, 4-64, 23-64.) Buffer zone waived. (Order 16-65.)	Three waterflood units. (Orders 3-64, 28-66, 10-69, 14-69.) Madison water injected.
KEG COULEE, NORTH Tyler (Penn.)	3	Strat.	Depletion	40-acre spacing units; well location in center of spacing unit with 150' topographic tolerance. (Order 46-64.) Buffer zone waived. (Order 16-65.)	None
KEITH (see East Keith)					
KELLEY Tyler (Penn.)	3	Strat.	Depletion	State-wide, 250' topographic tolerance. (Order 15-67.)	Waterflood using Third Cat Creek water. (Order 8-69.)
KEVIN-SUNBURST Sunburst (L. Cret.) Oil & Gas Swift (U. Jur.)	37 7	Strat. Structure	Depletion	9 wells per 40-acre tract; only 3 wells on any side of tract set back at least 220' from line. Field delineated by (Orders 8-54, 28-55.) (Estimated 400 wells shut-in.)	There are five waterfloods in operation, using Madison water. (Orders 9-64, 17-64, 30-64, 36-65, 29-71.)
Sun River (Miss.) Oil & Gas Gas only (Shut-in)	304 12 7	Structure-Strat.	Depletion		
KICKING HORSE Bow Island (L. Cret.) Sawtooth (Jur.) Gas	3 4	Structural	Depletion	320-acre spacing with location permitted no closer than 660' from unit boundary and 990' from field boundary. (Order 17-74.) One 640-acre unit. (Order 17-74.)	None
LAIRD CREEK Swift (U. Jur.) Oil & Gas (Shut-in)	11 1	Strat.	Depletion	State-wide. One shut-in gas well.	Unitized and waterflood authorized in Swift for oil production. (Order 25-74.)
LAKE BASIN Telegraph Creek (U. Cret.) Gas Virgelle (U. Cret.) Gas	8	Structural-Strat.	Volumetric	160-acre spacing units to base of Virgelle; wells no closer than 660' from unit boundary and 990' from field boundary. Commingling permitted after administrative approval. (Order 9-74.) Gas from Telegraph Creek pooled. (Order 29-75.)	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
LAKE BASIN, NORTH Eagle, Frontier (U. Cret.) Gas (Shut-in)	2 2	Structural	Unknown	640-acre spacing units consisting of one section. Locations 990' from section line. (Order 3-74.)	None
LANDSLIDE BUTTE Sun River (Miss.) (Shut-in)	2 1	Unknown	Water Drive	State-wide.	None
LAREDO Eagle (U. Cret.) Judith River (U. Cret.)	21 1	Unknown	Depletion	320-acre spacing with unit consisting of one-half section lying N-S or E-W at operator's option after administrative approval. Well no closer than 990' from unit boundary. (Order 8-74.)	None
LEARY Muddy (L. Cret.)	3	Structural-Strat.	Depletion	80-acre spacing with locations in NE $\frac{1}{4}$ and SW $\frac{1}{4}$ of each quarter section, 200' topographic tolerance. (Order 12-69, 19-70.)	None
LEROY Judith River-Eagle Virgelle (U. Cret.) Gas (Shut-in)	24	Unknown	Depletion	320-acre spacing with unit consisting of one-half section lying N-S or E-W at operator's option after administrative approval. Well no closer than 660' from unit boundary and 990' from field boundary. (Order 19-75.)	None
LISCOM CREEK Shannon (U. Cret.) Gas	7	Structural-Strat.	Depletion	Spacing, one well per 640 acres, with location no closer than 990' from section boundary. (Order 20-72.)	None
LITTLE BEAVER (Mont. Portion) Red River (Ord.)	24	Structural	Comb. Depletion and Water Drive	Spacing waived and General Rules 213 (Deviation), 218 (Commingling) and 219 (Dual Completion) are suspended until present Unit Agreement becomes inoperative. (Order 41-62.)	Waterflood of the Red River was commenced in August, 1967. (Order 3-66.) Minnelusa water.
LITTLE BEAVER, EAST (Montana Portion) Red River (Ord.)	9	Structural	Comb. Depletion and Water Drive	Same as for Little Beaver. (Order 42-62.)	Waterflood of the Red River was commenced in April, 1965. (Order 33-64.)
LITTLE WALL CREEK Tyler (Penn.)	10	Strat.	Depletion Water Drive	State-wide.	None
LODGE GRASS Tensleep (Penn.)	1	Structural-Strat.	Water Drive	160-acre spacing units; well locations vary according to areas; 250' topographic tolerance. (Orders 26-64, 26-65.)	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
LONE BUTTE Red River (Ord.)	2	Structural	Unknown	320-acre spacing units with well location at least 660' from unit boundary. Not delineated.	None
LONETREE CREEK Red River (Ord.)	7	Structural	Depletion	320-acre spacing, wells 660' from spacing boundary, 2000' between wells. (Order 29-72.)	None
LOOKOUT BUTTE (Includes Coral Creek Unit) Madison (Miss.)	3	Structural	Water Drive	State-wide spacing.	Water disposal into Madison. (Order 68-62.)
Interlake, Red River (Sil.-Ord.)	26	Structural	Comb. Depletion and Water Drive	160-acre spacing; well location in center of SE $\frac{1}{4}$ of each quarter section with 150' topographic tolerance. (Order 21-62.) Coral Creek Unit not subject to spacing rules. Redelineated per (Order 7-63.)	Waterflood of Silurian-Ordovician approved in 1966. (Order 35-66.) Water from Minnelusa.
MASON LAKE Lakota (L. Cret.)	2	Structural	Water Drive	State-wide.	None
MELSTONE Tyler (Penn.)	4	Structural- Strat.	Depletion	State-wide.	None
MIDDLE BUTTE Bow Island (Cret.)	2	Structural	Volumetric	320-acre spacing units consisting of E $\frac{1}{2}$ & W $\frac{1}{2}$ of each section; well location in center of either of the inside quarter-quarter sections located in E $\frac{1}{2}$ of each spacing unit. 75' topographic tolerance. (Order 3-60.) Re-delineated. (Order 21-75.)	None
MINERAL BENCH Duperow (Dev.)	1	Structural	Water Drive	State-wide.	Water disposal into Dakota-Lakota per (Order 18-65.)
MINERS COULEE Sunburst (L. Cret.) Swift (U. Jur.) Madison (Miss.) Sunburst-Swift Gas	2 3 1 1	Strat. Strat. Strat.? (Shut-in) (Shut-in) (Shut-in)	Depletion Depletion Water Drive	Oil: 40-acre units consisting of quarter-quarter sections; well location no closer than 330' from lease or property line and 660' from any other well. (Order 9-66.) Order 9-66 amended to comply with Order 5-74. Gas: 160-acre spacing with wells 990' from unit boundary. (Order 5-74.)	None
MONARCH Mission Canyon (Miss.)	2	Structural- Strat.	Water Drive	80-acre spacing units consisting of east and west half of quarter section. Well location in SW $\frac{1}{4}$ & NE $\frac{1}{4}$ of quarter section. Location within 660' square at center of quarter section. (Order 18-61.)	Produced water is disposed into the salt water disposal system for the Pennel Field.

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
Interlake, Red River (Sil.-Ord.)	10	Structural-Strat.		160-acre spacing units consisting of a quarter section; well location in center of SW¼ of each quarter section with 175' topographic tolerance. (Orders 12-59, 4-63.)	Waterflood initiated 12-1-73. (Order 23-73.)
MOSBY (See Cat Creek)	3 4	Structural-Strat.	Water Drive	Listed as part of Cat Creek.	Waterflood, 2nd Cat Creek sand. (Order 8-68.) Water-flood in Amsden. (Order 11-71.)
MOSSER Greybull (L. Cret.)	3 1	Structural	Water Drive	Spacing waived. Future development requires administrative approval of the Commission. (Order 27-62.)	None
MT. LILLY Madison (Miss.) Gas	3	Structural	Water Drive	640-acre spacing, well location in approximate center of any of the four quarter-quarter sections adjoining center of section; 250' topographic tolerance. (Order 37-63.)	None
MUD CREEK Amsden (L. Penn.)	2	Structural	Water Drive	640-acre spacing unit. Well location anywhere in 160-acre tract in center of each 640-acre well spacing unit (Order 9-63.)	None
NOHLY Red River (Ord.)	2	Structural	Volumetric Water Drive	State-wide.	None
NORTH GUILDFORD Sawtooth (M. Jur.)	1	Structural	Unknown	320-acre specified spacing units. One well per unit 660' from boundary, 2640' between wells. (Order 9-58.)	None
NORTH LAKE BASIN (See Lake Basin, North)					
NORTH WILLOW CREEK (See Willow Creek, North)					
OTIS CREEK Red River (Ord.)	2	Structural	Depletion	State-wide.	None
OTIS CREEK, SOUTH Red River (Ord.)	1	Structural	Depletion	State-wide.	None
OUTLOOK Duperow (Dev.)	2	Structural-Strat.	Water Drive	State-wide.	Produced water is disposed into Dakota and Siluro - Devonian formations. (Orders 16-59, 17-65, 36-66.)
Winnepegosis (Dev.)	3	Structural-Strat.	Water Drive	State-wide.	
Silurian-Devonian	3 2	Structural-Strat.	Water Drive	160-acre spacing units; well location in center of either SW¼ or NE¼ of each quarter section; 175' topographic tolerance. (Order 19-59A.)	

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
OUTLOOK, SOUTH Winnipegosis (Dev.)	1	Structural	Water Drive	160-acre spacing; permitted wells in either SW $\frac{1}{4}$ or NE $\frac{1}{4}$ of quarter section; 175' topographic tolerance. (Order 19-59A.) Commingling permitted. (Order 45-64.)	Produced water disposed into Muddy and Dakota formations. (Orders 19-59, 17-65.)
OUTLOOK, WEST Winnipegosis (Dev.)	2	Structural	Water Drive	160-acre spacing units consisting of quarter sections; permitted wells in either SW $\frac{1}{4}$ or NE $\frac{1}{4}$ with a tolerance of 175'. (Order 7-67.)	Produced water disposed into Dakota formation. (Order 42-66.)
PENNEL Mission Canyon (Miss.)	8	Structural	Depletion- Water Drive	80-acre spacing units consisting of east and west half of quarter section; wells located in center of SE $\frac{1}{4}$ and NW $\frac{1}{4}$ of quarter sections with 150' topographic tolerance. (Order 15-61.)	Produced water is being injected into Dakota, Siluro-Ordovician and Madison formations. (Orders 16-60, 46-62, 68-62, 36-63, 13-64.) Waterflood for Siluro-Ordovician approved Nov. 1968. (Order 24-68.)
Siluro-Ordovician Oil & Gas	103	Structural	Depletion- Water Drive	80-acre spacing units on west side and 160-acre spacing units on east side of pool. Wells to be located in SE $\frac{1}{4}$ and NW $\frac{1}{4}$ of each quarter section (80 acres) and in SE $\frac{1}{4}$ of each quarter section on 160-acre spacing. (Orders 1-56, 8-56, 15-61, 20-62, 4-63, 7-63.) Commingling approved. (Order 59-62.)	
PINE Mission Canyon (Miss.) Oil & Gas	5	Structural	Water Drive	Spacing and General Rules 213, 218 and 219 are waived within the Pine Unit. 80-acre spacing units outside of unit area; well location in NW $\frac{1}{4}$ and SE $\frac{1}{4}$ of quarter section; 150' topographic tolerance. (Order 37-62.) Gas through extraction plant.	A waterflood program for the south area was started in 1959. A waterflood of the north area was approved in 1967. (Orders 13-68, 1-60, 8-62, 32-67.) Produced water injected into Mission Canyon. (Order 10-A-74.)
Siluro-Ordovician Oil & Gas	108	Structural	Depletion- Water Drive		
PLEVNA Judith River (U. Cret.) Gas (Shut-in)	19 1	Structural	Water Drive	1200' from legal subdivision line; 2400' from other wells on same lease or unit; 75' topographic tolerance. (Orders 34-54, 4-57.)	None
PONDERA Sun River (Miss.) Oil & Gas	301	Structural- Strat.	Depletion- Water Drive	Oil: 220' from legal subdivision, 430' from other wells in same reservoir on same lease; 75' topographic tolerance. Porter Bench Extension: 330' from legal subdivision line; 650' from other wells in same reservoir on same lease or unit; 75' topographic tolerance. (Order 9-54.) Gas: 1320' from legal subdivision; 3700' from other wells on same lease or unit; 75' topographic tolerance. (Order 9-54.) General Rules 207, 211, 219, 221, 223, and 224 do not apply.	Produced water injected into lower Madison. (Orders 11-56, 15-56, 4-65, 4-66, 20-A-71.) A small waterflood project has been in operation since 1959, using Madison water.

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
PONDERA COULEE Sun River (Miss.)	4	Structural	Water Drive	330' from legal subdivision lines or upon a 10-acre spacing pattern; 75' topographic tolerance. (Order 5-62.)	None
POPLAR, EAST Madison (Miss.) (Charles & Mission Canyon fms.)	59	Structural	Water Drive	State-wide spacing; field delineated by (Order 7-55.)	Unitized in 1955. (Order 7-55.) Excess produced water has been injected into the Dakota Judith River, and Mission Canyon formations. (Orders No. 1-55, 5-57, 7-57, 14-61, 21-61, 34-61, 10-62, 51-67, 10-A-73.)
POPLAR NORTHWEST Charles (Miss.) ("B" & "C" or McGowan Zone)	9	Structural	Water Drive	80-acre spacing units for McGowan or "C" zone consisting of E½ and W½ of each quarter section; permitted wells in NW¼ and SE¼ of quarter section. All other formations on state-wide spacing. (Order 18-55.)	None
PRAIRIE ELK Charles "C" (Miss.)	1	Unknown	Water Drive	State-wide.	None
PRICHARD CREEK Sunburst (L. Cret.) Oil & Gas	4	Strat.	Depletion	Well locations subject to administrative approval.	None. Unitized as to Sunburst for water injection. (Order 7-73.)
PUMPKIN CREEK Shannon (U. Cret.) Gas	3	Structural-Strat.	Depletion	State-wide. Delineated. (Order 10-71.)	None
PUTNAM Interlake (Sil.)	1	Structural	Volumetric Water Drive	State-wide.	None. Gas. to McCulloch Gas Processing Corp. Brorson Plant.
Red River (Ord.)	1	Structural	Volumetric Water Drive		
RABBIT HILLS Sawtooth (Jur.)	4	Structural Strat.	Volumetric Water Drive	160-acre spacing unit. Well location 660' from spacing unit boundary. (Orders 17-73, 34-74).	None
RAGGED POINT Tyler (Penn.)	21	Strat.	Depletion	40-acre spacing units; 75' topographic tolerance. (Order 8-59.) Spacing waived for Tyler "A" sand reservoir within Tyler "A" Sand Unit except no well can be closer than 660' to Unit boundary. (Order 35-65.)	A waterflood project of the Tyler "A" sand was commenced in February, 1966, using Third Cat Creek water. (Order 35-65.)
Kibbey (Miss.)	0	Structural	Water Drive	State-wide spacing. (Order 15-54.) Commingling of production from Tyler and Kibbey permitted in one well per (Order 11-65.)	

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal	
RAPELJE Claggett, Eagle, Judith River, Virgelle (U. Cret.) (Shut-in)	15 1	Structural-Strat.	Water Drive	160-acre spacing. Wells no closer than 990' to unit boundary. Commingling after administrative approval. (Order 29-73.)	None	
RATTLESNAKE COULEE Sunburst (L. Cret.) Oil & Gas Bow Island (L. Cret.) Gas (Shut-in)	2 1	Strat.	Depletion	State-wide.	None	
RAYMOND Nisku (Dev.) Duperow (Dev.) Winnipegosis (Dev.) Red River (Ord.)	2 1 3 1	Structural-Strat.	Depletion Water Drive	320-acre spacing units. Wells 660' from spacing unit boundary. (Order 38-72.)	Produced water injected into Dakota formation. (Order 38-A-74.)	
RAYMOND, NORTHEAST Winnipegosis (Dev.) (Dual) Red River (Ord.)	2	Structural-Strat.	Depletion Water Drive	160-acre spacing units. Wells 660' from spacing unit boundary. (Order 12-74.)	None	
REAGAN Sun River (Miss.) Oil Gas (Shut-in)	51 12 4	Structural	Gas Cap- Water Drive	State-wide. (Order 17-54.)	A pressure maintenance project utilizing gas injection was started in 1961. (Order 21-60.) Water-flood. (Order 27-72.)	
REAGAN, WEST Blackleaf (U. Cret.) Gas	10	Strat.	Depletion	State-wide. Injected into Reagan field as secondary recovery agent.	None	
RED CREEK Cut Bank (L. Cret.) Oil & Gas (Shut-in) Sun River (Miss.) Oil & Gas (Shut-in)	7 2 12 9	Strat. Structural	Depletion Water Drive	40-acre spacing units; wells in center of spacing unit with 75' topographic or obstruction tolerance; spacing and field rules waived for unitized portion. (Orders 16-58, 73-62, 31-64, 5-70.)	Excess produced water injected into Bow Island and Madison. (Orders 22-63, 37-64.) A water-flood project in the Cut Bank sand was initiated in June, 1965, using Madison water.	
RED FOX Nisku (Dev.)	1	Structural	Water Drive	Field consists of one 160-acre spacing unit which straddles the section line. (Order 20-67.)	None	
REDSTONE Winnipegosis (Dev.) (Shut-in)	1 1	Unknown	Water Drive	One well per 160-acre unit, but no closer than 660' from unit boundary.	None	
REPEAT Red River (Ord.)	1	Unknown	Water Drive	State-wide.	None	

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
RESERVE					
Winnipegosis (Dev.)	1	Structural-Strat.	Water Drive	160-acre spacing units; permitted well within 1320' square in center of quarter section. Commingling of Red River and Interlake production permitted on individual well basis. (Orders 34-66, 27-67.)	Excess water injected into Dakota sand. (Order 23-A-67.)
Interlake (Sil.)	1	Structural-Strat.	Water Drive		
Red River (Ord.)	4	Structural-Strat.	Water Drive		
RICHEY					
Charles (Miss.)	1	Structural	Water Drive	State-wide.	Original 80-acre spacing revoked. (Order 11-73.)
RICHEY, SOUTHWEST					
Interlake, Dawson Bay (Sil.) (Dev.)	5	Structural	Depletion	160-acre spacing units; wells no closer than 900' from boundary of spacing unit. (Order 25-62.)	A waterflood project in the Interlake and Dawson Bay was started in 1965. (Order 34-65.)
RIPRAP COULEE					
Ratcliffe (Miss.)	2	Structural-Strat.	Depletion	State-wide.	None
ROSCOE					
Lakota (L. Cret.)	1	Structural	Water Drive	State-wide.	None
ROSEBUD					
Tyler (L. Penn.)	5	Structural-Strat.	Unknown	State-wide.	None
ROUGH CREEK					
Muddy (L. Cret.)	1	Structural	Depletion	State-wide. Formerly called Duncan Creek.	None
RUDYARD					
Sawtooth (M. Jur.) Gas	3	Structural	Volumetric	640-acre spacing units consisting of one section; well location in center of NW ¹ / ₄ of section with 75' topographic tolerance. (Order 2-58.)	None
RUSH MOUNTAIN					
Winnipegosis (M. Dev.)	1	Structural	Volumetric-Water Drive	State-wide. Dual zone completion in discovery well.	Excess water injected into Dakota sand. (Order 5-A-71.)
Red River (Ord.)					
SALT LAKE					
Bakken-Nisku (Miss.-Dev.)	3	Structural	Water Drive	State-wide.	None









Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
SAND CREEK Interlake, Red River (Sil.) (Ord.)	4 2	Structural	Water Drive	80-acre spacing units consisting of any two adjacent quarter-quarter sections. Wells located in center of NW¼ and SE¼ of each quarter section. (Order 16-59.) Commingling of production from Interlake and Red River authorized per (Order 49-62.)	Excess produced water is injected into the Swift formation. (Order 9-61.)
SECOND CREEK Red River (Ord.)	3	Structural	Volumetric Water Drive	State-wide.	None
SHEEPHERDER Tyler (L. Penn.)	3	Structural-Strat.	Unknown	State-wide.	None
SHELBY AREA Sunburst (L. Cret.) Gas Swift (Jur.) Gas	33	Structural-Strat.	Depletion	State-wide. Field outline not delineated. A few small Swift sand wells commingled with Sunburst.	None
SHERARD Eagle (U. Cret.) Gas	8 1	Structural-Strat.	Volumetric Water Drive	640-acre spacing units; 990' from section line. (Order 1-74.)	None
SHOTGUN CREEK Ratliffe (Miss.)	1	Structural	Water Drive	State-wide.	None
SIDNEY Mission Canyon (Miss.)	1	Structural	Water Drive	State-wide.	None
SIOUX PASS Interlake (Sil.) Red River (Ord.) Mission Canyon (Miss.)	3 1 1	Structural	Volumetric Water Drive	320-acre spacing units consisting of two adjacent governmental quarter sections lying N-S or E-W at operator's option. Permitted well no closer than 660' from unit boundary. (Interlake and Red River). 160-acre spacing unit (Mission Canyon) with well no closer than 660' from unit boundary. Commingling of Interlake and Red River production authorized. (Order 10-75.)	Excess water injected into Dakota formation. (Order 15-A-75.)
SIOUX PASS, NORTH Interlake (Sil.) Red River (Ord.) Dual Winnipegosis (Dev.)	3 1	Structural	Unknown	320-acre spacing units with well location at least 660' from unit boundary. (Order 12-75.) Field enlarged (Order 16-75.) Commingling from Interlake and Red River approved (Order 36-74.) Refer to Order 35-75 for modification.	None
SNYDER Tensleep (Penn.)	3	Structural	Water Drive	10-acre spacing units with center 5-spot permitted; 150' topographic tolerance. (Order 45-62.)	None
SOAP CREEK Tensleep, Amsden, Madison (Penn.) (Penn.) (Miss.)	22	Structural	Water Drive	One well per 10-acre spacing unit per producing formation; well location in center of spacing unit with 100' topographic tolerance. (Order 26-60.)	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
SPRING LAKE Nisku (Dev.) Red River (Ord.)	1 2	Structural	Depletion	One well per 160-acre spacing unit. Well location anywhere within 840' square in center of spacing unit. (Order 6-63.)	None
SQUAW COULEE (Now included as part of Tiger Ridge Field.) (Order 10-70.)					
STRAWBERRY CREEK Bow Island (L. Cret.) Gas	3	Strat.	Depletion	State-wide.	None
STENSVADE Tyler (Penn.)	8 9	Strat.	Depletion	40-acre spacing units; well location in center of spacing unit with 200' tolerance. (Orders 2-59, 7-60.) Wells may be drilled anywhere within waterflood unit boundary, no closer than 660' from unit boundary. (Orders 5-65, Amended.)	A waterflood operation has been in progress since 1963, using Madison water. (Orders 48-67, 9-67.)
SWANSON CREEK Phillips (U. Cret.) Gas	1	Strat.	Depletion	320-acre spacing units; well location SE NW each section. Wells no closer than 990' from unit boundary. (Order 36-75.)	None
SUMATRA Tyler (Penn.) Oil & Gas	94	Strat.	Depletion	40-acre spacing units; well located in center of unit with 75' tolerance. (Order 14-58.) Field re-delineated (Order 14-75.)	Four waterflood units using Madison water. (Orders 48-67, 6-69, 15-69, 19-69, 3-70, 16-72, 24-74, 5-75.)
TIGER RIDGE Judith River (U. Cret.) Gas	5 1	Structural-Strat.	Depletion-Water Drive	160-acre spacing; location no closer than 660' to unit boundary. (Order 32-73.)	(Orders 17-67, 23-68, 10-70.)
Eagle (U. Cret.) Gas	119 30	Structural-Strat.	Depletion-Water Drive	State-wide, for part not unitized. Two units: (Order 11-72 and 41-72.) Wells 990' from unit boundary. Originally one well per section within 2640' square in center of each unit and no closer than 1320' from boundary of unit. Changed to state-wide spacing by (Order 10-70.)	
Sawtooth (Jur.) Oil	1	Structural-Strat.	Water Drive	Enlarged and re-delineated (Order 13-75.) 160-acre spacing units in Sections 22, 23, 24, 32N-14E (Eagle and Virgelle) wells at least 990' from section line and 660' from quarter section line (Order 37-75.)	
TIMBER CREEK Sunburst (L. Cret.) Gas	2	Strat.	Depletion	320-acre spacing consisting of two adjacent governmental quarter sections lying N-S or E-W at operator's option. Permitted well no closer than 660' from spacing boundary and 990' from field boundary. (Order 24-75.)	
TRAIL CREEK Sunburst (L. Cret.) Gas	2	Structural-Strat.	Water Drive-Depletion	One well per 320 acres consisting of S½ and N½ of each governmental section but no closer than 990' from spacing boundary. (Order 33-70.)	None
TULE CREEK Nisku (Dev.)	5 1	Structural	Water Drive	160-acre spacing units with permitted well anywhere within 1320' square in center of each unit. (Orders 26-62, 6-65, 11-67.)	Produced water injected into Dakota and Judith River formations. (Orders 12-66, 24-67.)
TULE CREEK, EAST Nisku (Dev.)	2	Structural	Water Drive	160-acre spacing units with permitted well anywhere within 1320' square in center of each unit. (Orders 40-64, 6-65.)	Water injected into Judith River formation. (Order 13-68.)

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
TULE CREEK, SOUTH Nisku (Dev.)	3	Structural	Water Drive	160-acre spacing units with permitted well anywhere within a 1320' square in center of each unit.	Authority given to dispose of produced water into Dakota. (Order 44-64.) Into Judith River formation. (Order 29-67.)
UTOPIA Sawtooth (Jur.) Gas Madison (Miss.)	3 1 (Shut-in)	Structural	Depletion Water Drive	State-wide. Two wells produced small amount of oil from Swift sand.	None
VIDA Interlake (Sil.)	2	Structural	Water Drive	160-acre spacing units with permitted well anywhere within an 840' square in center of each unit. (Order 39-63.)	Water injected into Lakota formation. (Order 14-68.)
VOLT Nisku (Dev.)	5 2 (Shut-in)	Structural	Water Drive	160-acre spacing units with permitted well anywhere within a 1320' square in center of each unit. (Orders 27-64, 6-65, 32-65.)	Excess produced water is disposed into Judith River. (Order 3-65, 37-A-74.)
Charles "C" (Miss.)	1	Structural	Water Drive	State-wide.	
WAGON BOX Tyler (Penn.)	2	Structural-Strat.	Unknown	State-wide.	None
WELDON Kibbey (Miss.)	3 9 (Shut-in)	Structural	Partial Water Drive	80-acre spacing unit; each quarter section divided into two separate units running in either a north-south or east-west direction; well location in center of NE 1/4 and SW 1/4 of quarter section with 200' topographic tolerance. (Order 9-65.)	Excess produced water is disposed into the Dakota, Lakota, Morrison, and Charles formations. (Orders 31-65, 47-65, 37-66, 16-67.)
WEST BUTTE Sunburst (L. Cret.) Oil	1	Structural-Strat.	Depletion	State-wide, except W 1/2 Section 16 is considered a single spacing unit.	None
Sawtooth (Jur.) Gas Madison (Miss.) Gas	1	Structural	Water Drive	Sawtooth-Madison gas commingled, unitized. (Order 5-72.) No well closer than 330' from unit boundary.	
WEST REAGAN (See Reagan, West)					

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
WHITLASH Bow Island, Kootenai, Swift (Cret.) (Jur.)	49 7 7	Structural- Strat.	Volumetric	Gas: 300' from legal subdivision line and 2400' between wells, 75' topographic tolerance. Oil: 330' from legal subdivision line and 650' between wells; 5-spot location at center of 40-acre tract permitted; 75' topographic tolerance. General Rules 207, 211, 219, 221, 223, and 224 suspended. (Orders 16-54, 27-70.)	None
Madison (Miss.) Gas	4				
WHITLASH, WEST Sunburst, Swift (Cret.) (Jur.) Sawtooth (Jur.)	1 9 1	Structural- Strat.	Volumetric	Gas: 160-acre spacing units consisting of quarter sections; well location anywhere within a 660' square in center of spacing unit. Oil: 330' from legal subdivision line, 650' between wells in same reservoir on same lease; 5-spot location permitted. (Orders 61-62, 22-65 as amended.)	None
WILLOW CREEK, NORTH Tyler (Penn.) Oil	2	Structural- Strat.	Depletion Water Drive	State-wide.	Pilotflood. (Order 19-72.)
WILLS CREEK, SOUTH Interlake (Sil.)	2	Structural	Partial Water Drive	160-acre spacing units. Well location in center of SE $\frac{1}{4}$ of each unit with 175' topographic tolerance. (Orders 5-64, 30-66.)	Waterflood initiated 12-1-73. (Order 23-73.)
WINNETT JUNCTION Tyler (Penn.)	4	Strat.	Depletion Water Drive	State-wide.	None
WOLF SPRINGS Amsden (Penn.)	2	Structural	Water Drive	80-acre spacing units consisting of N $\frac{1}{2}$ and S $\frac{1}{2}$ of each quarter section. Well location in center of NW $\frac{1}{4}$ and SE $\frac{1}{4}$ of each quarter section with 75' topographic tolerance. (Order 4-56, 9-59.)	None
WOODROW Charles, Duperow, Interlake Red River (Ord.)	1 1 4	Structural	Water Drive	80-acre spacing units consisting of any two adjacent quarter-quarter sections; well locations in center of NE $\frac{1}{4}$ and SW $\frac{1}{4}$ of each quarter section with 200' topographic tolerance. (Order 47-62.)	Produced water injected into Dakota. (Order 48-62.)
WRIGHT CREEK Muddy (L. Cret.)	5 1	Structural- Strat.	Depletion Water Drive	80-acre spacing consisting of N $\frac{1}{2}$ and S $\frac{1}{2}$ of quarter section with locations in NW $\frac{1}{4}$ and SE $\frac{1}{4}$ of each quarter section with 200' tolerance.	None

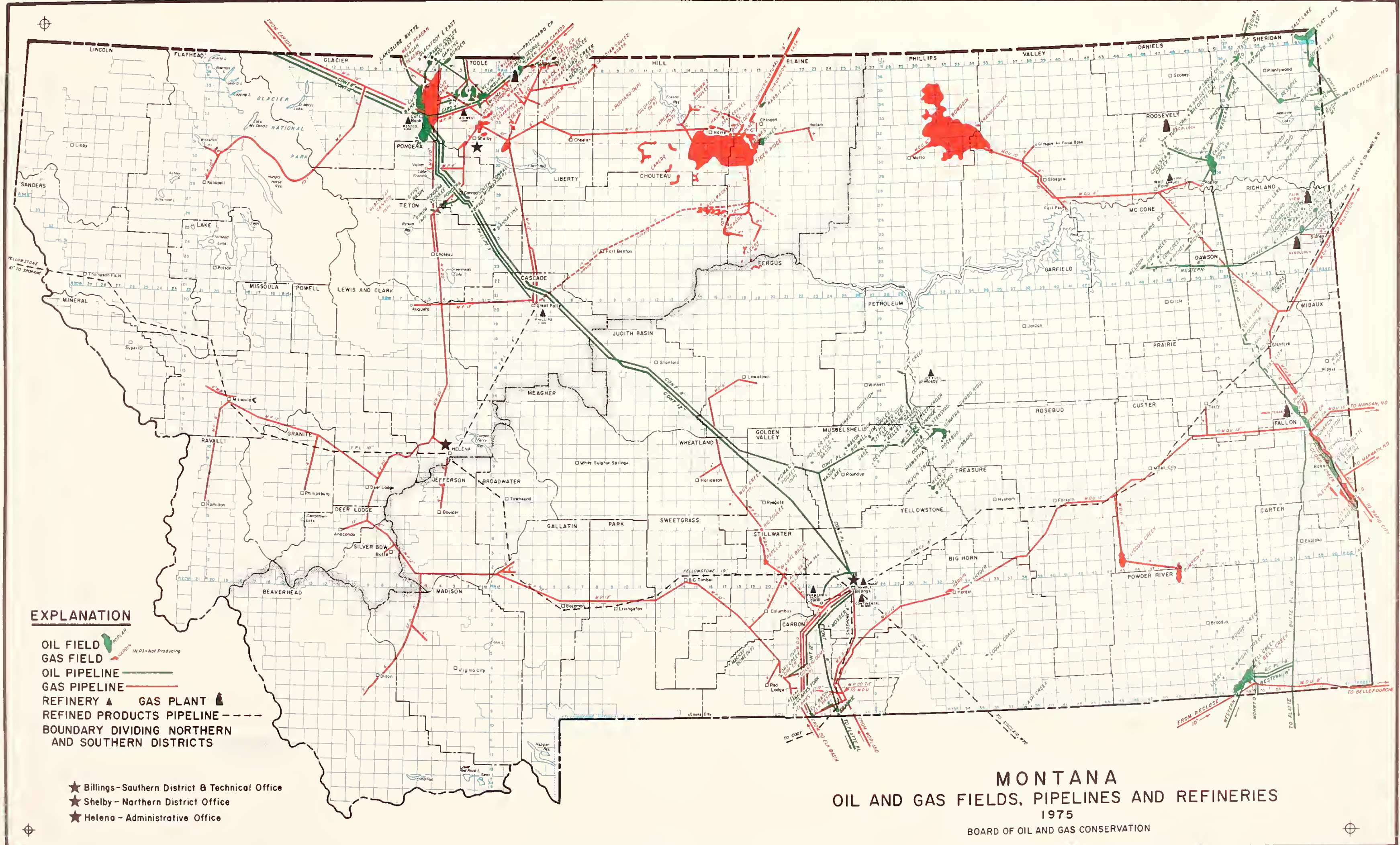
EXPLANATION

OIL FIELD 
 GAS FIELD 
 OIL PIPELINE 
 GAS PIPELINE 
 REFINERY  GAS PLANT 
 REFINED PRODUCTS PIPELINE 
 BOUNDARY DIVIDING NORTHERN AND SOUTHERN DISTRICTS 

★ Billings - Southern District & Technical Office
 ★ Shelby - Northern District Office
 ★ Helena - Administrative Office

MONTANA OIL AND GAS FIELDS, PIPELINES AND REFINERIES 1975

BOARD OF OIL AND GAS CONSERVATION



STATE OF MONTANA - SUMMARY OF PRODUCING OIL FIELDS - 1975

MONTANA BOARD OF OIL AND GAS CONSERVATION

LINE NO.	FIELD	COUNTY	PRODUCING FORMATION	YEAR OF DISCOVERY	DEPTH	GRAVITY °API	NET PAY FT.	POROSITY (%)	SW (%)	D.O.I.P. (BBL./ACRE)	PRODUCTIVE AREA 1-1-76 (ACRES)	D.O.I.P. (M. BBL.)	RECOVERY FACTOR (%)	RECOVERY (%)	ULTIMATE RECOVERY (M. BBL.)	CUMULATIVE PRODUCTION 1-1-76 (M. BBL.)	RESERVES 1-1-76 (M. BBL.)	1975 PRODUCTION (BBL.)	1975 PRODUCTION (BOEPD)	ULTIMATE RECOVERY (BBL.)	ULTIMATE RECOVERY (ACRE/FT.)	LINE NO.			
1	Ash Creek	Big Horn	Shannon (U.Cret.)	1952	4,500	34	1.05	14	22	42	13,200	200	2,640	25	7	650	180	830	739	91	8,848	24	4,150	296	1
2	Bainville	Roosavalt	Red River (Ord.)	1969	10,300	45	1.75	38	15	34	16,680	320	5,340	8	--	450	--	450	295	155	17,160	47	1,410	37	2
3	Bears Den	Liberty	Sunburst (L.Cret.)	1924	2,300	39	1.00	20	12	35	11,210	200	2,340	23	--	520	--	520	406	115	9,626	26	2,600	130	3
4	Bell Creek	Powder River	Muddy (Cret.)	1967	4,400	36	1.11	10	26	33	13,900	16,000	223,840	26	26	58,000	58,000	116,000	77,549	38,451	8,671,450	23,757	7,250	735	4
5	Benrud	Roosevelt	Wisku (Dev.)	1961	7,700	43	1.41	22	16	30	13,560	80	1,080	19	--	209	--	209	209	--	200	1	2,610	119	5
6	Benrud, East	Roosevelt	Wisku (Dev.)	1962	7,500	46	1.37	22	15	30	13,080	480	6,280	48	--	3,000	--	3,000	1,889	1,111	128,014	351	6,250	284	6
7	Benrud, Northeast	Roosevelt	Wisku (Dev.)	1964	7,600	46	1.40	23	16	30	14,270	160	2,280	43	--	980	--	980	1,135	135	16,507	45	6,130	267	7
8	Big Muddy Creek	Roosevelt	Interlake (Sil.)	1975	11,100	60	1.52	46	3	65	2,470	320	790	25	--	200	--	200	21	179	19,397	53	630	14	8
9	Big Muddy Creek	Roosevelt	Red River (Ord.)	1975	11,900	48	1.72	11	14	36	4,450	960	4,270	28	--	1,200	--	1,200	286	914	273,570	750	1,250	114	9
10	Big Wall	Musselshell	Amsden (Penn.)	1957	2,500	19	1.01	17	16	35	13,580	280	3,800	18	--	700	--	700	630	70	6,399	19	2,500	147	10
11	Big Wall	Musselshell	Tyler (Penn.)	1968	3,600	31	1.02	22	17	40	17,070	1,220	25,830	20	2	3,300	500	6,400	5,342	458	62,861	172	5,250	139	11
12	Blackfoot	Glacier	Cut Bank (L. Cret.)	1955	3,500	31	1.11	15	15	35	10,220	160	1,640	26	--	420	--	420	155	155	18,177	50	2,630	175	12
13	Blackfoot	Glacier	Madison (Miss.)	1955	3,600	25	1.15	8	14	40	4,530	480	2,170	36	--	780	--	780	1,045	155	18,177	50	1,630	204	13
14	Bowes	Blaine	Sawtooth (M. Jur.)	1949	3,300	19	1.02	37	12	31	23,300	3,760	87,610	3	2	2,200	2,000	9,200	7,978	1,222	127,793	350	2,450	66	14
15	Brorson	Richland	Madison (Miss.)	1954	9,600	32	1.40	40	5	40	6,650	1,120	7,450	15	--	1,100	--	1,100	731	369	20,656	84	980	25	15
16	Brorson	Richland	Red River (Ord.)	1968	12,600	48	1.70	20	10	35	5,930	1,440	8,540	25	--	2,100	--	2,100	1,743	357	63,900	175	1,460	73	16
17	Brorson, South	Richland	Red River (Ord.)	1968	12,600	48	1.70	20	12	30	7,670	480	3,680	43	--	1,600	--	1,600	910	690	71,921	197	3,330	167	17
18	Brush Lake	Sheridan	Red River (Ord.)	1969	11,400	40	1.50	30	14	35	14,120	2,240	31,630	9	--	2,700	--	2,700	1,532	1,168	132,435	363	1,210	40	18
19	Burns Creek	Dawson	Red River (Ord.)	1972	11,400	39	1.25	14	14	40	7,300	320	2,340	9	--	200	--	200	126	174	14,280	39	630	45	19
20	Cabin Creek	Fallon	Madison (Miss.)	1956	7,300	33	1.13	25	11	30	13,220	2,260	29,880	49	--	14,600	--	14,600	13,166	1,434	316,281	867	6,460	258	20
21	Cabin Creek	Fallon	Silluro-Ordovician	1953	9,000	33	1.20	50	13	30	13,220	7,620	224,180	23	11	51,000	24,300	75,000	56,360	18,640	1,696,298	4,647	9,840	197	21
22	Canal	Richland	Red River (Ord.)	1970	12,700	47	2.07	58	10	19	10,430	320	3,340	15	--	500	--	500	422	78	33,639	92	1,560	27	22
23	Cat Creek (Mosby)	Petroleum	Kootenai (L.Cret.)	1920	1,200	52	1.10	10	21	19	12,000	200	2,400	21	8	500	200	700	700	92	3,303	92	3,500	370	23
24	Cat Creek	Petroleum, Garfield	Kootenai (L.Cret.)	1945	1,600	52	1.10	6	22	40	5,590	240	1,340	30	--	400	--	400	5,053	547	49,555	136	5,110	204	25
25	Cat Creek	Petroleum, Garfield	Ellis (U. Jur.)	1945	1,700	52	1.10	25	18	40	19,940	880	16,760	26	1	4,400	100	4,500	5,053	547	49,555	136	5,110	204	25
26	Cat Creek (West Dome)	Petroleum	Kootenai (L. Cret.)	1920	1,100	52	1.10	51	21	19	61,180	900	55,060	27	6	14,600	3,300	17,900	17,332	568	72,228	198	19,890	390	26
27	Cat Creek	Petroleum	Amsden (Penn.)	1967	2,000	52	1.00	10	8	30	4,340	80	350	17	14	60	50	110	58	52	8,707	24	1,380	138	27
28	Cow Creek	McCone	Charles (Miss.)	1969	6,800	40	1.20	25	8	48	6,720	240	1,610	9	--	150	--	150	97	53	6,231	17	630	25	28
29	Cow Creek, East	McCone	Kibbey (Miss.)	1971	6,300	35	1.05	15	15	35	10,810	300	3,240	52	--	1,700	--	1,700	940	760	166,427	456	5,670	178	29
30	Cupton	Fallon	Red River (Ord.)	1955	9,600	38	1.25	40	12	30	20,850	1,600	13,360	5	--	1,700	--	1,700	921	779	131,522	360	1,060	27	30
31	Cut Bank	Glacier, Toole, Pondera	Kootenai (L.Cret.)	1952	2,500	31	1.09	18	15	35	12,490	49,000	612,010	20	5	122,500	32,500	155,000	137,345	17,855	2,448,276	2,708	3,160	176	31
32	Cut Bank	Glacier	Madison (Miss.)	1945	3,000	34	1.10	10	14	30	6,910	3,200	22,110	34	--	7,500	--	7,500	6,389	1,111	96,645	265	2,340	234	32
33	Deer Creek	Dawson	Interlake (Sil.)	1956	9,400	43	1.20	38	7	30	12,400	320	3,850	34	--	1,130	--	1,130	1,190	110	11,058	30	4,060	107	33
34	Dwyer	Sheridan	Ratcliffe (Miss.)	1960	8,000	37	1.32	38	11	56	10,810	3,840	41,510	11	4	4,500	1,500	6,000	5,391	609	118,816	326	1,560	41	34
35	Elk Basin	Carbon	Frontier (U. Cret.)	1916	1,200	45	1.16	30	21	20	33,710	120	4,050	27	15	1,500	600	2,100	1,506	594	30,651	84	17,500	583	35
36	Elk Basin	Carbon	Tensleep (Penn.)	1942	5,000	29	1.16	124	11	10	82,100	1,400	114,940	--	47	--	53,500	53,500	50,624	2,876	525,708	1,440	38,210	308	36
37	Elk Basin	Carbon	Madison (Miss.)	1942	5,300	28	1.12	224	12	9	169,430	920	155,880	9	6	14,000	9,500	23,500	17,339	6,161	333,906	1,737	25,540	114	37
38	Elk Basin, Northwest	Carbon	Tensleep (Penn.)	1964	6,000	37	1.15	27	12	22	17,050	580	9,890	10	3	1,000	300	1,300	1,175	125	28,286	77	2,240	83	38
39	Elk Basin, Northwest	Carbon	Madison (Miss.)	1947	6,200	35	1.08	124	12	35	69,480	200	13,900	7	--	1,000	--	1,000	927	73	3,458	9	5,000	40	39
40	Fairview	Richland	Winnipegosis (Dev.)	1967	11,500	43	1.10	27	7	30	9,330	160	1,490	20	--	300	--	300	259	51	10,514	29	1,890	70	40
41	Fairview	Richland	Red River (Ord.)	1965	12,700	47	1.70	35	11	28	12,650	1,920	24,290	19	--	4,500	2,300	6,800	4,501	2,299	290,859	797	3,540	101	41
42	Fertile Prairie	Fallon	Red River (Ord.)	1952	9,300	29	1.20	6	14	27	3,960	400	1,580	35	--	550	--	550	395	155	13,590	37	1,380	230	42
43	Flat Coulee	Liberty	Swift (U. Jur.)	1933	2,900	37	1.10	18	21	35	17,330	1,280	22,180	11	11	2,800	2,400	5,200	2,707	2,493	126,530	347	4,060	226	43
44	Flat Lake	Sheridan	Ratcliffe (Miss.)	1964	6,500	33	1.26	14	15	45	7,110	9,600	68,260	14	7	9,300	5,100	14,400	9,080	5,320	615,432	1,686	1,500	107	44
45	Flat Lake, South	Sheridan	Ratcliffe (Miss.)	1964	6,500	33	1.26	14	15	45	7,110	9,600	68,260	14	7	9,300	5,100	14,400	9,080	5,320	615,432	1,686	1,500	107	44
46	Fort Gilbert	Richland	Red River (Ord.)	1970	12,500	46	1.89	42	12	20	16,550	640	10,590	12	--	1,300	--	1,300	861	912	81,944	225	2,030	48	45
47	Frederick	Carbon	Tensleep (Penn.)	1928	2,700	27	1.02	29	19	16	35	80	2,820	27	--	750	--	750	636	64	8,170	22	3,380	323	47
48	Fred & George Creek	Toole	Sunburst (L. Cret.)	1963	2,600	39	1.20	31	27	30	37,880	880	33,320	23	20	7,700	6,700	14,400	8,525	5,875	434,514	941	16,360	528	48
49	Fred & George Creek	Toole	Swift (U. Jur.)	1963	2,700	39	1.10	8	14	30	5,530	840	4,650	28	--	1,300	--	1,300	1,054	245	35,765	98	1,550	194	49
50	Froid, South	Roosevelt	Red River (Ord.)	1970	12,100	48	1.55	12	17	25	7,660	160	1,230	16	--	200	--	200	144	56	6,031	17	1,250	104	50
51	Gas City	Dawson	Red River (Ord.)	1955	8,900	38	1.28	25	12	35	11,820	2,800	33,100	26	6	8,600	2,000	10,600	8,359	2,241	234,238	642	3,750	152	51
52	Girard	Richland	Red River (Ord.)	1969	11,900	46	1.15	18	15	40	10,930	320	3,500	10	--	350	--	350	299	51	6,967	19	1,090	61	52
53	Glendive	Dawson	Red River (Ord.)	1952	8,900	38	1.25	147	8	35	47,440	1,280	60,720	22	--	13,500	--	13,500	10,235	3,265	252,924	693	10,550	72	53
54	Goose Lake	Sheridan	Ratcliffe (Miss.)	1962	7,000	34	1.20	40	16	55	18,620	6,880	128,110	6	1	8,000	1,200	9,200	6,175	3,025	300,747	824			



GENERALIZED STRATIGRAPHIC CORRELATION CHART

SHOWING PRODUCTIVE FORMATIONS IN MONTANA OIL AND GAS FIELDS *

• OIL
★ GAS
1975

CHARLES G. MAIO, GEOLOGIST — JUDSON O. SWEET, PETROLEUM ENGINEER

MONTANA BOARD OF OIL AND GAS CONSERVATION

ERA	PERIOD	SOUTHWESTERN MONTANA	CRAZY MOUNTAIN BASIN	BIG HORN BASIN		SOUTH CENTRAL MONTANA		CENTRAL MONTANA		SWEETGRASS ARCH		NORTH CENTRAL MONTANA		NORTH POWDER RIVER BASIN		WILLISTON BASIN		PERIOD	ERA
CENOZOIC	TERTIARY	BEAVERHEAD	TONGUE RIVER TULLOCK HELL CR LENNEP BEARPAW JUDITH RIVER CLAGGETT	FORT UNION LANCE MEETEETSE MESA VERDE CODY SHALE				FORT TONGUE RIVER UNION TULLOCK HELL CREEK FOX HILLS BEARPAW JUDITH RIVER CLAGGETT EAGLE VIRGELLE TELEGRAPH CR NIOBRARA-CARLILE GREENHORN BELLE FOURCHE		WILLOW CREEK ST. MARY RIVER HORSE THIEF BEARPAW JUDITH RIVER CLAGGETT EAGLE VIRGELLE TELEGRAPH CREEK		FORT UNION TULLOCK HELL CREEK FOX HILLS BEARPAW JUDITH RIVER CLAGGETT EAGLE VIRGELLE TELEGRAPH CREEK		FORT TONGUE RIVER UNION TULLOCK HELL CREEK FOX HILLS BEARPAW JUDITH RIVER CLAGGETT EAGLE VIRGELLE TELEGRAPH CREEK		FORT TONGUE RIVER UNION TULLOCK HELL CREEK FOX HILLS BEARPAW JUDITH RIVER CLAGGETT EAGLE VIRGELLE TELEGRAPH CREEK			
MESOZOIC	CRETACEOUS	UPPER	MONTANA COLORADO GROUPS	MONTANA COLORADO GROUPS	MONTANA COLORADO GROUPS	MONTANA COLORADO GROUPS	MONTANA COLORADO GROUPS	MONTANA COLORADO GROUPS	MONTANA COLORADO GROUPS	MONTANA COLORADO GROUPS	MONTANA COLORADO GROUPS	MONTANA COLORADO GROUPS	MONTANA COLORADO GROUPS	MONTANA COLORADO GROUPS	MONTANA COLORADO GROUPS	MONTANA COLORADO GROUPS	MONTANA COLORADO GROUPS	UPPER	CRETACEOUS
	LOWER		KOOTENAI	KOOTENAI	KOOTENAI	KOOTENAI	KOOTENAI	KOOTENAI	KOOTENAI	KOOTENAI	KOOTENAI	KOOTENAI	KOOTENAI	KOOTENAI	KOOTENAI	KOOTENAI	KOOTENAI	LOWER	MESOZOIC
	JURASSIC	UPPER	MORRISON SWIFT RIERDON SAWTOOTH	MORRISON SWIFT RIERDON PIPER	MORRISON SWIFT RIERDON PIPER	MORRISON SWIFT RIERDON PIPER	MORRISON SWIFT RIERDON PIPER	MORRISON SWIFT RIERDON PIPER	MORRISON SWIFT RIERDON PIPER	MORRISON SWIFT RIERDON PIPER	MORRISON SWIFT RIERDON PIPER	MORRISON SWIFT RIERDON PIPER	MORRISON SWIFT RIERDON PIPER	MORRISON SWIFT RIERDON PIPER	MORRISON SWIFT RIERDON PIPER	MORRISON SWIFT RIERDON PIPER	UPPER	JURASSIC	
	MIDDLE																	MIDDLE	
	LOWER ?																	LOWER ?	
	TRIASSIC	LOWER ?																TRIASSIC	
	PERMIAN																	PERMIAN	
	PENNSYLVANIAN																	PENNSYLVANIAN	
	MISSISSIPPIAN																	MISSISSIPPIAN	
	PALEOZOIC	DEVONIAN	UPPER															UPPER	PALEOZOIC
	MIDDLE																	MIDDLE	
	LOWER																	LOWER	
	SILURIAN																	SILURIAN	
	ORDOVICIAN																	ORDOVICIAN	
	CAMBRIAN	UPPER																UPPER	
	MIDDLE																	MIDDLE	
	LOWER																	LOWER	
	PROTEROZOIC	PRE-CAMBRIAN																PRE-CAMBRIAN	PROTEROZOIC
	ARCHEOZOIC																		ARCHEOZOIC



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